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ALTERNATIVE REMEDIAL CONTRACT STRATEGY  
U.S. EPA CONTRACT NUMBER 68-W8-0122  
WORK ASSIGNMENT NUMBER 47-7JZZ**

**DRAFT  
ENVIRONMENTAL PRIORITIES INITIATIVE  
PRELIMINARY ASSESSMENT  
VOLUME I**

**SKF INDUSTRIES, INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MISSOURI  
EPA ID #MOT300010345**

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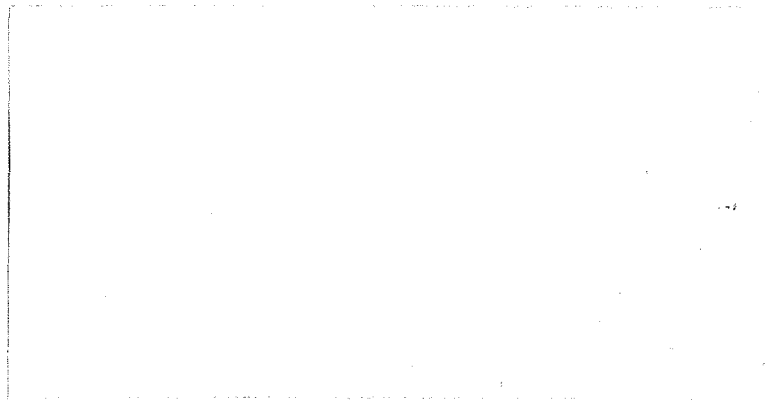
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**JACOBS ENGINEERING GROUP INC.**

**ALTERNATIVE REMEDIAL  
CONTRACTS STRATEGY  
REGIONS VI, VII & VIII**



**REMEDIAL PLANNING ACTIVITIES  
AT  
SELECTED UNCONTROLLED HAZARDOUS  
SUBSTANCE DISPOSAL SITES  
U.S. EPA CONTRACT NO. 68-W8-0122**

**IN ASSOCIATION WITH,  
TERRACON CONSULTANTS EC, INC.  
McCLELLAND ENGINEERS, INC.**

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## EXECUTIVE SUMMARY

A Preliminary Assessment (PA) and Visual Site Inspection (VSI) were conducted by Terracon Environmental, Inc. (Terracon) on behalf of the U.S. Environmental Protection Agency (EPA) Region VII, at the former site of the SKF Industries McQuay-Norris facility in St. Louis, Missouri on February 24, 1992.

SKF was formerly at 2320 Marconi Avenue, St. Louis County, St. Louis, Missouri. United States Geological Survey (USGS) 7.5 minute quadrangle maps do not delineate sections in this area of St. Louis. By extrapolating from labeled sections within a four-mile radius, the site's approximate location appears to be in the northeast  $\frac{1}{4}$  of Section 30, Township 45 North, Range 7 East.

Information regarding ownership history prior to 1976 is unclear. According to EPA and Missouri Department of Natural Resources (MDNR) file information, McQuay-Norris was a subsidiary of SKF Industries when it began operations at the site in 1918. However, an MDNR inspection report states that SKF Industries acquired the property from Eaton, Inc. in 1976 (Ref. 23). When SKF ceased operations in 1986, they sold the property to the Cordage Mill Management Company. The Cordage Mill Management Company held title to the property until approximately December 1990 when American Bank of St. Louis and Boatmen's Bank of Missouri foreclosed on Cordage Mill (Ref. 7). Currently, Boatmen's Bank owns the north and east portions of the property where townhomes are located, including the area east of Building No. 25. American Bank owns the remainder of the property except for Building No. 27 which was sold to the Bacchi Club of St. Louis in January 1992.

Activities at the facility during SKF's ownership included the manufacturing of piston rings and related engine parts as well as electroplating and degreasing operations. A foundry was operated on-site until 1971. Because the facility has been closed for approximately six years, information regarding the past operational history was derived in large part from third party (consultants) reports. SKF personnel were not available at the VSI to provide first-hand descriptions of former operations.

SKF submitted a RCRA Part A permit application in 1980 for generator and transporter, storage, and disposal status. SKF later requested that their status be changed to "generator only". SKF claims they have never used their interim treatment, storage, and disposal (TSD) status, but a 1984 MDNR inspection noted hazardous waste storage exceeding 90 days. When SKF ceased operations at this site, a financial assurance mechanism had not been developed, and closure in accordance with 40 CFR Part 264 was not performed.

Potable water for the area is supplied by the City of St. Louis, which serves a total population of 2,371,000. Sources for the St. Louis water treatment works are outside of the site's four-mile radius and upstream with

respect to surface water flow. There are no surface water intakes along the River Des Peres or Mississippi River for drinking water use within 15 miles downstream of the site.

The surface water drainage pathway from the facility property is to the north and west. Surface water runoff is generally intercepted by a combined sanitary/storm sewer system. Water in this collection system is conveyed to the LeMay Treatment Works which is adjacent to the confluence of the River Des Peres and the Mississippi River.

As a result of the VSI, five Solid Waste Management Units (SWMUs) and four Areas of Concern (AOC) were identified at the site. The SWMUs include a refuse dumpster at Building No. 5; two dumpsters at Building No. 2A; the area east of Building Nos. 4 and 25 where a former release of kerosene occurred, facility buildings had been demolished, and where former storage areas were located; the former location of Building No. 30 used formerly for storage of hazardous waste; and the former location of Building Nos. 18, 22, 21, 23, and 24, used historically for storage and chrome plating operations. AOCs identified include a room in Building No. 1 where hydrochloric acid was stored and staining of the floor was noted beneath a hot water heater/furnace; areas in Building Nos. 3 and 4 where staining was noted beneath transformers and other electrical equipment; Building No. 2A where plating operations formerly occurred; the area south of Building No. 5 where four underground storage tanks have been abandoned in place.

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**1.0 INTRODUCTION**

A Preliminary Assessment (PA) and Visual Site Inspection (VSI) were conducted by Terracon Environmental, Inc. (Terracon) on behalf of the U.S. Environmental Protection Agency (EPA) Region VII, at the former site of SKF Industries McQuay-Norris facility in St. Louis, Missouri on February 24, 1992. Terracon, as a subcontractor to Jacobs Engineering Group, Inc. within the EPA Alternative Remedial Contracting Strategy (ARCS) program, performed these tasks as part of the EPA Environmental Priorities Initiative (EPI), Work Assignment Number 47-7JZZ.

**1.2 Objective**

The objective of the EPI/Preliminary Assessment (PA) was to conduct on-site and cursory off-site inspections of the former SKF facility in order to characterize Solid Waste Management Units (SWMUs), associated releases, and other Areas of Concern (AOCs). The goals of the VSI were to determine whether or not a release has occurred or has the potential to occur, identify any immediate threats to human health or the environment from an actual or potential release, inventory SWMUs, and determine if a site has the potential to be placed on the National Priority List (NPL) based on the PA Scoresheet (Revised Hazard Ranking System). The PA Scoresheet for the site is provided in Volume II of this report.

**1.2 Scope of Work**

The scope of the investigation included the following activities:

- a search of EPA and State files to obtain and review all pertinent documents that provide background information regarding historic and current facility processes and solid waste management practices;
- development of a detailed site base map to scale including site features, SWMU and AOC locations;
- evaluation of target populations within a four-mile radius from the site with regard to groundwater and air, and within a 15-mile stream distance for surface water;

- a well survey within a four-mile radius of the site;
- photo-documentation of all SWMUs and related releases and exposure pathways; and
- determine whether there has been release or is the potential for a release of solid waste to the environment.

## **2.0 SITE DESCRIPTION**

### **2.1 Site Location**

The location of the former SKF Industries McQuay-Norris facility is at 2320 Marconi Avenue, St. Louis County, St. Louis, Missouri. The site is bordered by Marconi Avenue on the west and Bischoff Avenue on the north. The Missouri Pacific Railroad tracks border the site on the southeast. USGS 7.5 minute quadrangle maps do not delineate sections in this area of St. Louis. By extrapolating from labeled sections four miles away, the site's approximate location appears to be in the Northeast  $\frac{1}{4}$  of Section 30, Township 45 North, Range 7 East (Ref.1). Coordinates of the site are 38° 36' 50" latitude and 90° 16' 21" longitude (Ref. 1). Figure 1 represents the site location. Figure 2 depicts the area within a four-mile radius of the site.

### **2.2 Site Features**

The facility property consists of an approximate 9.8 acre triangular tract of land in west-central St. Louis, Missouri. The site measures approximately 900 feet east-to-west on the north side and approximately 1,200 feet north-to-south along the west side, and is located in a densely-populated urban area. Four manufacturing and commercial buildings/complexes comprise the commercial portion of the site. Facility grounds are variably paved with asphalt or concrete.

The SKF facility ceased operation in 1986. During its operation, most manufacturing activities (including plating, machining, and shipping) were conducted in the large U-shaped building complex on-site. The complex consisted of Building Numbers 2, 2A, 3, 3A, 4, and 25. Eleven other smaller buildings were used for offices, maintenance, storage, etc. The building numbers referenced are associated with SKF operations. In some instances, such as the U-shaped complex, a single structure has been allotted several building numbers to denote separate areas

within the structure. Figure 3 presents the details of the site layout as it was before the facility closed. Since the closing, 15 buildings have been demolished and removed. Figure 4 depicts the site as it presently exists.

As depicted by Figures 3 and 4, the former SKF buildings on the eastern portion of the property (Building Numbers 26, 26A, 32, 28, 7, 20, and 29) and buildings formerly located on the north central portion of the site (Building Numbers 30, 24, 23, 21, 22, and 18) have been demolished as have some sections of Building No. 25. A railroad spur, formerly located in this area has been removed as well. The area formerly occupied by Building No. 30 is covered with grass except for a graveled area north of Building No. 25. The area encompassing former Building Nos. 24, 23, 21, 22, and 18 has been paved.

Presently, a recording studio, a mill work business and a paper products company occupy the former SKF buildings which remain on-site. In addition, St. Ambrose Town Homes, a new housing development which consists of approximately 13 townhomes, has been built on the north and northeast sections of the property.

The mill work business, Shamrock Building Supply (Shamrock), currently leases space in the main building complex on-site. The business occupies Building Numbers 2, 2A, and part of 25. The business' carpentry shop is located on the west side of Building No. 2A. During the VSI, an oily residue was noted on the concrete floor in some areas of the shop. Mr. Tom Walsh, owner of Shamrock, stated that there had been a 2-inch thick wooden block floor in this building when his company moved to the site. The floor was removed after efforts to clean an oily residue from the wood failed. The remainder of Building No. 2A and Building Numbers 2 and 25 is used for warehousing mill products (i.e., lumber, molding, doors). Approximately three years ago, Shamrock remodeled the western interior of Building No. 25 for office space.

During the VSI, it was noted that the concrete floor in Building No. 25 was covered in some places with what appeared to be sawdust; no stains were seen. Several cracks were visible in the floor and, in the center of the warehouse area, there were sections of concrete, approximately 3-foot by 5-foot in size, that appeared to have been patched with newer concrete. The patches were approximately 5 feet apart and extended north-to-south through the building.

A downspout outside on the west side of Building No. 2 was plugged and corroded. Two dumpsters measuring approximately 6 feet by 6 feet by 6 feet were located outside at the north end of Building Number 2A. A truck loading dock also extends across the north side of that building. Wooden pallets were observed piled next to

the east side of the building. A small pile of boards and plastic was observed outside adjacent to the south wall of Building Number 25.

Building Numbers 3 and 4 are presently being leased by the paper products company, Esselte Pendaflex, for storage of file folders and other paper products. During the VSI, an oily residue was observed over much of the floor area in both buildings.

A boiler room is located on the east side of Building Number 4 along with a brick stack, 70 feet high and 69 inches in diameter, which is associated with the boiler system. Available information indicates the boiler most recently used natural gas as its fuel source. A small box-like room adjacent to the boiler appears to have been used for coal storage at one time.

Four large transformers were found stored in a room on the west side of Building Number 4 and oil was observed on the floor beneath them. The transformers were not labeled as to their PCB content. Another room containing electrical equipment was found on the east side of Building Number 4. Four large transformers, three switching boxes, a capacitor, a generator comprised of eight batteries and a 55-gallon drum labeled "PPE" were stored in the room. Oily stains were visible on the floor.

Four large transformers were also observed outside in an area between Building Numbers 3 and 4. As access was limited, observations of the area were made through an open window in Building Number 3. Stains were visible on the concrete beneath the transformers. Several empty 5-gallon buckets and other waste refuse were discarded nearby.

A property assessment report dated September 18, 1991, prepared by Sitex Environmental, Inc., on behalf of SKF, indicates that the transformers and other electrical equipment noted previously were sampled and tested for PCBs, and reportedly the PCB concentration was nondetectable. The Sitex report is included in Appendix D.

A loading dock ramp has been built adjacent to Building Number 3A. An approximate one-foot-wide storm drainage grate extends across the base of this ramp. Some oil staining was visible near this grate and at several other locations on the pavement. The oil staining appeared similar to oil staining typically left by parked automobiles. Two storm sewer drains were observed in the paved area, one east of the loading dock ramp and the other on the northeast side of Building 2A.

Building Number 5, located on the southwest corner of the site, is presently occupied by Music Masters, Inc. The building was locked during the VSI and access to the interior of the structure was restricted. The upper floor is reportedly used as a recording studio; the ground floor is vacant. A trash dumpster, labeled "No Hazardous Waste", measuring 6 feet by 3 feet by 3 feet, is located outside on the north side of the building. A large vent duct was observed on the north wall of the building exiting at the ground floor level and ending above the roof.

Available information indicates that four underground storage tanks (USTs) are located on the south side of Building Number 5. During the VSI, vent pipes were noted underneath the stairway entrance adjacent to the south side of the building. Available information indicates these USTs, used for the storage of gasoline, were emptied and filled with gravel when abandoned (Refs. 10,11).

A pole mounted transformer was noted near the entrance to Building Number 5, in close proximity to the USTs' vent pipes. The transformer was not labeled as to its PCB contents. No stains were noted on the ground beneath the transformer.

Building Number 27 is located at the northwest corner of the site. It was most recently occupied by The Print Shop, a silk screening business. The Print Shop business has reportedly been evicted from the site. During the VSI, individuals were observed moving materials from the building. An open 55-gallon drum labeled "paper and board waste only", several boards, pallets and other debris were stored by a doorway on the southeast corner of the building.

The complex consisting of Building Numbers 1, 1A, 1B, 13, and 19, abuts the south side of Building Number 2 and is currently unoccupied. The buildings contain several small rooms which formerly served as offices. The upper floor of the area was vacant during the VSI. Several kitchen and restaurant appliances were found in one room on the lower level. The items were reportedly being stored for a partner of the developer who currently owns the property and were to be removed in the future.

An adjacent room on the east side of the complex contained several miscellaneous items including trash, a mattress, boards, pipes, and plastic, and a partially-full 35-gallon drum labeled "hydrochloric acid", and "descaler-delimer". Staining was noted on the floor beneath a hot water heater/furnace in the room.

A wooden fence approximately six feet high separates the site from railroad tracks on the southeast and extends from Bischoff Avenue to Building Number 4. The housing development referenced previously, St. Ambrose Town Homes, was constructed on this portion of the SKF site. The majority of existing townhomes border Bischoff Avenue, while a few more are situated 100 to 200 foot south of Bischoff Avenue. The vacant area remaining has been prepared for the construction of additional townhomes. Two cul-de-sacs have been paved and future lots have been staked.

During the VSI, the ground surface in this area (to the east of Building Numbers 25 and 4, extending to the cul-de-sac), was covered with grass; however, a significant amount of metal, wood, and concrete rubble was noted on the surface.

Elevation of the site is 510 feet above mean sea level (Ref. 1). The surface slopes downgradient to the south and west over most of the property. Stormwater drains on-site and along the curbs of Marconi and Bischoff Avenues intercept most runoff from the property.

Land use surrounding the site includes residential, commercial, and industrial zoning. Residential housing occupies most of the land to the north and west. Vitales Bakery is located at the northeast corner of the intersection of Marconi and Bischoff, Trapino's Restaurant & Lounge at the northwest corner, and Fairmount Automotive Service at the southwest. Southeast of the site, beyond the railroad tracks, lies Tension Envelope and Wolman Wood Protection Products. Crandolet, a large metal foundry is located northeast of the site.

Based on 1980 Census data, the population within increments of a 4-mile radius is as follows (Ref.12):

<u>Radius Sector</u>	<u>Population</u>
0 - .25 mile	799
.25 - .50	4,055
.5 - 1.0	7,824
1.0 - 2.0	34,661
2.0 - 3.0	134,523
3.0 - 4.0	151,243

## **2.3 Ownership History**

Information regarding ownership history prior to 1976 is unclear. According to file information, McQuay-Norris was a subsidiary of SKF Industries when it began operations at the site in 1918. However, an MDNR inspection report states that SKF Industries acquired the property from Eaton, Inc. in 1976 (Ref. 23). When SKF ceased operations in 1986, they sold the property to the Cordage Mill Management Company. The Cordage Mill Management Company held title to the property until approximately December 1990, when American Bank of St. Louis and Boatmen's Bank of Missouri foreclosed on Cordage Mill (Ref. 7). Currently, Boatmen's Bank owns the north and east portions of the property where townhomes are located, including the area east of Building Number 25. American Bank owns the remainder of the property except for Building Number 27 which was sold to the Bacchi Club of St. Louis in January 1992.

## **2.4 Nature of Operations**

Available information indicates the McQuay-Norris facility, a subsidiary of SKF Industries, began operations at the St. Louis site on April 1, 1918. Prior to the facility's construction, the site was reportedly a vacant lot. The facility has operated as a manufacturer of cast gray iron piston rings, transmission seal rings, turbocharger rings, and other mechanical parts, for automotive and small engine applications.

Manufacturing activities at the site have included a foundry operation, fabrication and machining, electroplating and degreasing. The foundry was operated on-site until 1971 when SKF moved that phase of the facility's production to Washington, Missouri; other manufacturing activities, however, continued. During its most recent operational history, the plant reportedly employed approximately 100 people.

The facility ceased operation on July 31, 1986. Buildings on-site have subsequently been leased and/or sold to several different business entities whose activities have included a mill work business, paper product storage, music recording and silk screen printing.

As the facility has been defunct for approximately six years, information regarding the past operational history of the site was derived in large part from an environmental risk assessment developed for the SKF facility by Risk Science International (RSI), a Phase I environmental assessment report of the property prepared by Sitex

Environmental, Inc. (Sitex), and process descriptions contained in regulatory inspection reports. Appendices D and E contain copies of these reports. SKF personnel were not present during the VSI.

The majority of buildings located on the SKF site during its operational history were constructed in 1919. Demolition of several of the original structures has taken place. Figure 3, the Former SKF Site Layout Plan, and Figure 4, the 1992 Site Layout Plan, identify the building locations and activities conducted therein.

Building Complex Number 1 (including areas designated as Building Numbers 1, 1A, 13, 18 and 19) was built in 1919 and used during the facility's operational history as office space. This area is currently vacant.

Building Numbers 2, 3 and 4, which comprise part of the main U-shaped building complex on-site, were also constructed in 1919. Building Number 2A was added in 1946. Building Number 2 was originally used as a machine shop, Building Number 3 as a warehouse, and Building Number 4 as a foundry. Building Number 25, also part of the main U-shaped structure, was used for foundry operations as well; no information was available on the date of its construction (Ref. 14). As noted previously, Building Numbers 2, 2A and part of Building Number 25 are currently occupied by Shamrock Building Supply. Building Numbers 3 and 4 are used for paper product storage by a paper product company called Esselte Pendaflex.

Building Number 5 was also constructed in 1919. Available information indicates that past uses of the structure may have included a garage, carpenter shop, laboratory and cafe. The building is currently occupied by Music Masters, Inc., a recording studio.

Building Number 27, built in 1947, was originally used for offices and lockers. (Ref. Sitex). The silk screening business, The Print Shop, recently vacated this building.

Building Numbers 18, 21, 22, 23 and 24 were also built in 1919. The original use of Building Number 18 was storage; Building Numbers 21 and 23 were plating facilities; Building Number 22 was the maintenance facility; and Building Number 24 was a laboratory. These buildings were demolished some time after 1985.

Building Number 30 was originally used for storage of machinery. Available information indicates it was later used for storage of hazardous wastes. No construction or demolition dates were available in the material

reviewed. The Sitex report dated March 6, 1991 indicates it was likely demolished with Buildings 18 through 24 in 1985.

In summary, at the time the facility ceased operation, available information indicates manufacturing and production activities were taking place in the following areas:

<u>Building Nos.</u>	<u>Activity</u>
1, 5, 10, 19, 27	Administrative/Office Work
2, 3, 4	Machining
2A	Plating, Shipping
7, 20	Warehouse
22	Maintenance
23	Chrome plating
24	Printing
25	Raw Material Storage
30	Hazardous Waste Storage
32	Metal Spraying

Manufacturing processes at the SKF facility consisted primarily of electroplating, machining, and degreasing. Castings for facility operations were produced by the SKF foundry in Washington, Missouri. Hazardous materials in use at the facility included plating chemicals (chromic acid, zinc phosphate, and tin compounds), hydraulic oils, water soluble oils, 1,1,1-trichloroethane (TCA), acetone, acid and alkaline cleaners, and sodium cyanide. Information contained in an MDNR inspection report dated September 10, 1984, indicated that other manufacturing processes, which included a manganese-phosphate/Parkolene coating operation; lapping; derusting/electrocleaning; laboratory analysis and quality control; packaging and shipping took place at the facility as well.

Iron and steel castings for piston rings and other parts arrived at the facility in tubs. The castings were machined in several steps which included rough turn and bore, splitting, finish turn and bore, and finish splitting. A variety of special machining activities was also performed, such as cutting slots into automotive oil rings. The slotted rings were blasted with glass beads in order to remove burrs. A water-soluble cutting oil and mineral seal oil were used in the machine shops. Rings were subsequently dipped in 1,1,1-TCA to remove the oil. Wastes generated from the machining operations included:

- o Scrap iron and cast iron grinding waste sold to Grossman, Inc., St. Louis, Missouri for iron reclamation;
- o Particulates (cast iron) generated in the machining operation which were collected in five baghouses to control the emissions. The estimated efficiency of the unit was 99.5 to 99.7 percent. These materials were sold to Grossman for reclamation;
- o Spent 1,1,1-TCA generated in parts degreasing operations and machine cleaning. Also generated with contaminated gray-iron dust during the expander press and cam-turn-bore (CTB) equipment;
- o Powder/ash (silica) generated during the glass blasting operation. The waste was reportedly used by facility personnel as fill for excavation around residences. The powder had not been analyzed, nor was it registered with the MDNR.
- o Glass bead fragments from shot blasting which were disposed in a sanitary landfill.
- o Spent water soluble cutting oil and mineral seal oil;
- o Water soluble oil used during mechanical operations which was discharged to the MSD sewer;
- o Mineral seal oil used in surface grinders and molly operations was filtered, replenished and reused. Filter cake generated from the process was accumulated and sold with waste motor oil to Arkansas Oil Company.

Available information indicates sometime in 1985 the facility began transporting the spent 1,1,1-TCA to Clayton Chemical Company, Sauget, Illinois for reclamation. Approximately 1,000 gallons per year of the material were reportedly generated at that time.

In preparation for subsequent plating processes and/or fabrication, rings were submerged in a sulfuric acid solution then placed in a cold water wash. Wastes generated from this process included the following:

- o Sludge from sulfuric acid tank which was removed from tank, filtered, and then drummed for disposal at ILWD, Inc., in Indiana. The tank was cleaned annually. Approximately 120 gallons of waste was generated per year. The waste was registered with MDNR;
- o Wastewater from rinse tank which was discharged to MSD sewer.

Three types of plating/coating operations were performed at the facility at the time of its closure: chromium, tin, and zinc phosphate. Approximately 80 percent of the rings produced at the plant were plated in one or more of the operations. Each plating operation involved dipping the rings into a series of tanks. Tin plating was done manually, while the chrome and zinc phosphate lines were mechanically operated.

A pre-tin plating process reportedly involved grit blasting of the rings. The tin plating line series included an electrolytic cleaning tank containing an alkaline solution; a cold water rinse; a plating solution of potassium hydroxide and potassium stannate; a warm water rinse; and a one percent solution of hot, soluble oil (gulf cut

solution) to prevent oxidation. The plated ring was then passed through a dryer on the line. The alkaline cleaning tank on the tin plate line was vented to the outside with no emission controls. Tanks on the plating line were cleaned annually. Wastes generated on the tin plating line included:

- o Sludge/paste (water-leached beads/grit dust) generated from grit blasting of rings in pretreatment process which is deposited in the refuse dumpster for disposal at sanitary landfill;
- o Water containing soluble oil discharged from tin plating line;
- o Wastewater from cold water rinse which is discharged to municipal sewer;
- o Sludge from plating tanks, containing alkaline materials, potassium hydroxide, potassium stannate which is registered with MDNR is discharged at an average rate of six gallons per minute; thus, approximately 180 gallons generated per year;
- o Oily sludge from gulf cut solution tank which is considered nonhazardous by SKF. An inspection report dated 1984 indicated the facility had contracted Jerry Russell Bliss, Inc. for its disposal. The waste had not been analyzed and it was not registered with the MDNR.

Available information indicates the zinc phosphate plating line was composed of the following baths in series: a 10 percent sulfuric acid solution; a 10 percent solution of alkaline cleaner; a hot water rinse; a cold water spray; the plating tank, containing a solution of zinc phosphate and calcium permeated with hydrogen bubbles; another cold water spray, followed by a bath containing a 0.5 percent solution of chromic acid (Parkolene). The plated item was then sent through a dryer on the line. The zinc phosphate plating operation was not an electrolytic process. The tank containing the zinc phosphate solution was vented to the outside with no emission controls. No information was available on the frequency with which maintenance (i.e., tank cleaning) was conducted on the zinc phosphate line, nor on the disposition of sludge generated during this process. Wastes generated on the zinc phosphate line included the following:

- o Wastewater from hot and cold water rinses; discharged to the MSD sewer system at average rate of 34 gallons per minute; and
- o Sludge from plating tanks containing sulfuric acid, alkaline materials, zinc phosphate, calcium, chromium.

Available information indicates that prior to the implementation of the zinc phosphate coating process a manganese-phosphate (Parkolubrite)/Parkolene coating operation was in place. The process line included the following tanks in series: Parkolene solution (containing chromium); detrex solution (containing cadmium); hot water rinse; cold water spray; two-step Parkolubrite solution (containing cadmium); cold water wash; and Parko cleaner solution. Wastes generated by the process line included the following:

- o Rinse/overflow water and solution from all tanks which was discharged to MSD sewer at a rate of approximately 1,500 gallons per month; and
- o Sludge from cleaning of Parkolene and detrex tanks (cleaned once per week) and from cleaning of Parkolubrite tanks (cleaned once per month). These sludges are expected to be chromium and cadmium contaminated. Approximately 340 gallons were generated per month and disposed at Bob's Home Service, Inc. landfill in Wright City, Missouri. Waste was analyzed and registered with the MDNR.

Rings designated for chrome plating underwent a pre-chrome plating process which included the application of a hot wax treatment followed by a vapor blast. The blast cabinet tank contained a mixture of Trifine and Sureflow solution. No Material Safety Data Sheets (MSDS) were available for these materials. The chrome plating line consisted of four plating tanks which contained chromic acid and a series of three rinse tanks. The closed loop rinse system for the line was immediately downstream of the plating tanks. Water from the rinse tanks served as makeup for the plating tanks; water flowed between the tanks in response to float switches. Wax was broken loose from the rings in a buffing tank and the rings were then further rinsed in a cold water, hot water, and detergent series. A description of the chrome plating process in the 1984 MDNR inspection report indicated that the series of tanks on the chrome plating line included a cold water rinse, a tech flake solution, a cold water spray wash, a four step Unichrome solution, a cold water spray wash, a wax removal/strip arbor process, and a cold water wash. Following chrome plating, the rings were processed on another line composed of a series of treatment/cleaning tanks. Rings were passed through a ditex solution, Parkolene solution, and a gulf cut solution in series. Water rings on each chromic acid tank controlled acid mist emissions. The estimated efficiency of the water rings was 99.7 percent. Available information indicates that wastes generated in the chrome plating operation included the following:

- o Particulate emissions from the chrome plating baths;
- o Process wastewater from final rinse following wax removal (approximately 17 gallons per minute were discharged to MSD system);
- o Sludge collected from the tank bottoms on the chrome pre-treatment line was generated at a rate of approximately 25 gallons per month. Waste sludge had not been analyzed or registered with the MDNR at the time of the 1984 inspection;
- o Sludge collected from tanks containing tech flake and Unichrome solutions was removed manually and accumulated in drums for disposal at ILWD, Inc., in Indiana. Tanks are cleaned annually and sludge was generated at a rate of approximately 360 gallons per year. The waste was registered with MDNR; and
- o Sludge removed from post-chrome treatment baths was removed from tanks and drummed for disposal at Bob's Home Service landfill or at ILWD, Inc., in Indiana. Tanks were cleaned once per year generating sludge at a rate of approximately 360 gallons per year. The sludge had not been analyzed, nor was it registered with MDNR.

The facility reportedly ceased operation of a tin-nickel plating line in 1983. Wastes generated from that operation were reportedly cyanide contaminated. The waste was not registered with the MDNR. Information on the wastes generated in this process were not available in the file material reviewed.

During the 1960s and earlier, spent plating solutions and other wastes were reportedly discharged to the MSD sewer. Available information indicates that MSD did not require the facility to obtain a permit. MSD did, however, monitor the effluent from the plant on a quarterly basis. Reportedly, SKF did not monitor the effluent.

Wastewater from the plating operations reportedly collected in two concrete catch basins serviced by two sumps. Information contained in the RSI report indicated that Sitex Corporation had inspected the sumps in July 1985 and the sumps were "found to be sound, although the bottom of one sump could not be thoroughly inspected because of a layer of oil remaining after dewatering". Wastewater from the tin and zinc plating lines was discharged to a common outfall in the main building. The wastewater contained alkaline cleaners and had, at times, a reportedly high pH. Metals monitored in the effluent included zinc, cadmium, chromium, copper, lead, and nickel.

Other discharges to the municipal sewer from the facility included sanitary wastewater and boiler blowdown. The 1984 MDNR inspection report stated that the SKF facility had eight discharge points connected to the MSD sewer.

Information contained in the 1984 MDNR inspection and the RSI reports alluded to several other operations which reportedly occurred at the facility. A small scale operation for spray painting stripes on finished rings took place in an unidentified area of the facility. The painting area was reportedly cleaned with acetone. The weld shop of the facility had a heat treat furnace which was used to harden tools from the machine shop. The process involved immersion of the tools in a bath containing a 15 percent solution of sodium cyanide. A salt bath heat treatment process was also identified. Sludge from this operation had not been sampled, nor was it registered with the state.

The 1984 MDNR report also discussed what appears to be another rust removal process which took place at the facility. The report stated that the "cyanide and endox containing sludge" generated in the process was registered with the MDNR. The report stated that process steps had been altered sometime in May 1984, however, and

sludge generated at the time of the inspection was reportedly "cyanide- and endox-free, bio-degradable". Approximately 50 kilograms of waste cyanide liquids and sludges were generated per year. The waste was reportedly treated and disposed of at ILWD, Inc., in Indianapolis, Indiana. No other information concerning these processes was available in the file material reviewed.

Spent 1,1,1-TCA was reportedly generated in other facility operations as well (i.e., wax cleaning, Parkolene coating). The spent solvent waste was registered with the MDNR. The majority of waste 1,1,1-TCA was generated in the form of sludge removed from tanks containing the chemical. The waste was collected from various process tanks and machines and stored in an approximately 250-gallon above ground, horizontal tank located in the southeast corner of the plant. At the time of the inspection the facility had installed a pump and mechanical filter device to filter the waste 1,1,1-TCA solution for reuse. The report indicated that the facility had not generated any amount of waste 1,1,1-TCA sludge from the filtering process at that time. It should be noted that this inspection report appears to indicate the referenced tank was located in the interior of the plant. The Sitex report, however, appears to indicate the tank was located outside. Prior to using 1,1,1-TCA for solvent purposes on-site, the facility reportedly used 1,1,1-trichloroethylene (TCE).

Other solvents in use at the facility included kerosene, mineral spirits, and acetone. The materials were used for general maintenance activities, painting, lapping, wet grinding, and bulk wrapping. These waste solvents were accumulated in an approximately 250-gallon above ground, horizontal tank also located in the southeast corner of the plant. The dirty solvent was filtered and replenished for reuse. No sludge had been generated from this operation at the time of the inspection.

In addition to the above noted materials, the facility also used nickel pentate, hydrochloric acid, nitric acid and sulfuric acid in the steel department and quality control laboratory. Waste sludge from these operations were combined with sulfuric acid sludge for disposal.

Industrial trade waste generated at the facility was disposed in a refuse dumpster. Environmental Industries, Inc. transported the waste to the Weber Landfill, or West County Landfill, in St. Louis, Missouri for disposal.

The report generated by RSI indicated that drummed raw materials (specifically referred to as "solvents, oils, and other chemicals") were stored in a designated area of the main building complex, as were castings, and that

wastes consisting mainly of oil and 1,1,1-TCA were "stored in small buildings". The report indicated that spill containment was not provided in either storage area.

The RSI report stated that the emission inventory questionnaire filed by the SKF facility in 1985 indicated that the facility emitted approximately one ton of total suspended solids per year; most arising from the zinc plating line and the machining operations.

Four steel, 1,000-gallon underground storage tanks (USTs) are located south of Building No. 5 and have reportedly been abandoned in place. The tanks were formerly used for storage of gasoline. The RSI report indicated that three of the tanks were reportedly tested and found to be free of leaks, filled with gravel and left in place, sometime prior to 1986. In addition, the report stated that the fourth UST had recently been abandoned by filling with gravel, after it had been "crudely tested by making dipstick measurements over a period of a week". The report indicated that the tank was constructed of steel and was approximately 20 years old.

The RSI report identified an empty above ground tank at the site formerly used for the storage of diesel fuel. The tank was located "in a diked, gravel-covered area". The report indicated that there was no visible evidence of spilled fuel in the diked area on the day of RSI site visit, and that available information indicated the tank had never leaked. In addition to the tank used for diesel storage, SKF had reportedly "recovered TCA and kerosene in two small tanks outside. The report indicated that the tanks were no longer in use. The report stated that "Soil testing by the Sitex Corporation indicated evidence of spilled kerosene, with a concentration of 50 ppm in one sample. No TCA was detected above the detection limit of 10 ppm." The report also indicated that the "ground near an air compressor was also stained by oil that was blown down or spilled.

Prior to the facility's shut down in 1986, the entire SKF site was reportedly fenced, with access provided through locked gates. The plant reportedly operated 16 hours per day, 5 days per week, and was served by electronic security and fire protection systems. Facility personnel reportedly conducted weekly inspections of process equipment and waste and raw material storage areas.

## **2.5 Permit and Regulatory History**

McQuay-Norris submitted their initial Notification of Hazardous Waste Activity on August 15, 1980, which indicated activity as a generator and a treatment, storage and disposal (TSD) facility. The EPA waste codes

listed on the form were F001, D001, and D002 (Ref. 15). The facility submitted a RCRA Part A permit application on November 20, 1980 (Ref. 13). The application documented 3,000-gallon capacity container storage, 1,500-gallon capacity tank storage, and 15 cubic yards of waste pile storage. Estimated annual quantities of wastes generated at the facility were identified as follows:

<u>EPA Hazard Waste No.</u>	<u>Estimated Annual Quantity of Waste (lbs)</u>
D001	20,000
D002	38,000
D007	2,400
D008	10,000
F001	5,000

Maps included with the application identified an outside "storage area", north of Building Number 3A and east of Building Number 2A; a "drum storage area" on the southeast portion of the site, adjacent to the railroad tracks and east of Building Numbers 12 and 6; and a dumpster on the northeast portion of the site, adjacent to Building Number 29. (Ref. 13).

The Acknowledgement of Notification of Hazardous Waste Activity for the facility was dated January 12, 1981 (Ref. 16). McQuay-Norris was assigned the EPA identification number MOT300010345. The facility's Missouri Hazardous Waste Generator number is number 01115.

A letter to McQuay-Norris from the EPA indicated that the Part A Permit Application filed by the facility was incomplete. Deficiencies and/or discrepancies in the process codes were identified. McQuay-Norris was instructed to respond to the letter by September 24, 1981.

McQuay-Norris submitted the Generator Annual Hazardous Waste Report for calendar year 1981 on December 15, 1982 (Ref. 18). The following wastes were reported have been generated at the facility during the reporting period:

<u>EPA Hazardous Description</u>	<u>Waste No.</u>	<u>Amount of Waste (lbs.)</u>
Waste Trichloroethylene	F001	9,600
Waste Sulfuric Acid	D002	1,700
Waste Cyanide Solution	F009	470

Waste transporters used during that time included McKesson Chemical (MOD084396985), Environmental Emergency Services (MOD000687418), and Nelson Industrial Services (MID005355391). Waste Research and Reclamation in Eau Claire, Wisconsin (WID990829475) and Nelson Industrial Services in Detroit Michigan (MID005355391) were the TSD facilities to which the wastes were shipped.

A log sheet for hazardous waste shipments from June 27, 1981 through January 16, 1985 was included in an Environmental Risk Assessment report prepared by Sitex, dated March 6, 1991 (Ref. 14). The log sheet is summarized in Table 2-1.

In a letter dated May 27, 1982, the EPA informed McQuay-Norris of the new closure, post-closure, and financial responsibility regulations under RCRA (Ref. 17). A subsequent letter dated October 21, 1983, concerning closure costs and financial assurance, was addressed to SKF Industries, Inc. The letter indicated that the financial test mechanism submittal provided by the facility satisfied the regulatory requirements for the cost estimates provided and that liability coverage for the facility was adequate. The letter stated, however, that the EPA was unable to determine the adequacy of the specific cost estimates provided by SKF as the closure procedures were not sufficiently detailed. The facility was instructed to provide the needed information within 30 days. A closure plan was submitted by SKF on November 16, 1983.

An inspection of the McQuay-Norris facility was conducted by the MDNR May 11, 1982. The 1982 MDNR inspection report listed three unsatisfactory features noted during the inspection: 1) paperwork necessary to comply with the TSD facility requirements had not been completed; 2) several manifest deficiencies were noted; and 3) surface water drainage from the hazardous waste storage area was not controlled.

**TABLE 2-1**  
**HAZARDOUS WASTE SHIPMENTS**  
June 27, 1981 through January 16, 1985

SKF Industries, Inc.  
2320 Marconi Avenue  
St. Louis, Missouri

Date Shipped	Material	EPA Waste Code	Quantity	Shipped To
6/27/81	Trichlorethene Waste	F001	9600 lbs. 6-55 gal. drums	Waste Research & Reclamation Eau Claire, WI
6/30/81	Waste Sulfuric Acid Waste Cyanide Solution	F009 F009	110 gal. 55 gal.	Nelson Industrial Service Detroit, MI
5/18/82	Parko-Lubrizo Waste	D006	1085 gal. 17-55 gal. drums 5-30 gal. drums	Bob's Home Service Wright City, MO
5/19/82	Chloroethane Waste	F001	11,900 lbs. 17-55 gal. drums	Chemical Waste Management Joliet, IL
2/25/83	Parko-Lubrizo Waste	D006	660 gal. 12-55 gal. drums	Bob's Home Service Wright City, MO
3/24/83	Trichlorethene Waste	F001	6300 lbs. 9-55 gal. drums	Clayton Chemical Sauget, IL
9/20/83	Parko-Lubrizo Waste	D006	550 gal. 10-55 gal. drums	Bob's Home Service Wright City, MO
10/27/83	Waste Chromic Acid Solid Waste Corrosive Liquid Waste Sulfuric Acid Solution		8-55 gal. drums 16-55 gal. drums 2-55 gal. drums	ILWD, Indianapolis, IN
10/27/83	Waste Cyanide Solution Waste Sodium Cyanide Solution Waste Cyanide Solution		2-55 gal. drums 1-55 gal. drum 1-55 gal. drum	ILWD, Indianapolis, IN

**TABLE 2-1 (Continued)**  
**HAZARDOUS WASTE SHIPMENTS**  
June 27, 1981 through January 16, 1985

SFK Industries, Inc.  
2320 Marconi Avenue  
St. Louis, Missouri

Date Shipped	Material	EPA Waste Code	Quantity	Shipped To
10/27/83	Waste Cyanide Solution Waste Sodium Cyanide Solution Waste Cyanide Solution		2-55 gal. drums 1-55 gal. drum 1-55 gal. drum	ILWD, Indianapolis, IN
12/23/83	Sodium Cyanide Acetone		2-55 gal. drums 2-55 gal. drums	ILWD, Indianapolis, IN
3/16/84	Parko-Lubrizo Waste	D006	330 gal drum 6-55 gal. drums	Bob's Home Service Wright City, Mo
5/08/84	Parko-Lubrizo Waste	D006	275 gal. drum 5-55 gal. drums	Bob's Home Service Wright City, MO
8/20/84	Parko-Lubrizo Waste	D006	440 gal. drum 8-55 gal. drum	Bob's Home Service Wright City, MO
10/22/84	Waste Cyanide Liquid Waste Cyanide Sludge	UN-1935	330 gal. drum 110 gal. drum	ILWD, Indianapolis, IN
1/16/85	Trichloroethene Waste	F001	1000 gal. Bulk	Clayton Chemical Sauget, IL

An inspection was reportedly conducted by MDNR at the facility in 1983; however, a copy of the report was not available in the file material reviewed. Copies of the inspection reports are included in Appendix E.

On March 26, 1984, SKF submitted financial test mechanism information for the current year. In the letter, the company notified the EPA that the facility's name had been changed from McQuay-Norris, Inc. to SKF Automotive Products, Inc., on July 8, 1983.

MDNR conducted an inspection of the SKF facility on August 2, 1984. The inspection report dated September 10, 1984 indicated that SKF had failed to characterize several of the waste streams generated at the facility, and that unregistered wastes had been stored at the facility for over 90 days. Hazardous waste containers were insufficiently labeled and dates of accumulation were not noted. Deficiencies were noted in the waste analysis plan, inspection logs, personnel training plan, and contingency plan. In addition, the report indicated that SKF had never filed an annual hazardous waste shipment report with the EPA, nor had they paid the State of Missouri hazardous waste generator or land disposal fee. The report indicated SKF had provided adequate closure plan and financial assurance of estimated cost for facility closure but had not furnished liability coverage. Manifests reviewed during the inspection contained two different EPA numbers in use by the facility, MOT300010345 and MOD990830396. The report stated that, after consultation with the EPA, the facility was advised to use the former number. Other manifest deficiencies included the use of incorrect waste identification numbers, the omission of EPA identification numbers for transporters and TSD facilities, and failure to utilize and maintain the manifests in serially increasing shipment numbers.

SKF was advised to correct the noted deficiencies and to conduct an audit of its manufacturing operations in order to properly identify and manage all hazardous waste streams generated at the facility. The inspection report noted that SKF representatives present during the inspection stated that even though the company had generated and stored more than 1,000 kg of hazardous wastes for periods greater than 90 days, they planned to lower the generation rate and make more frequent shipments of hazardous wastes in the future. The report indicated that SKF planned to request that the EPA remove its TSD facility designation and, if possible, the RCRA-regulated generator status.

On August 30, 1984, the SKF facility requested EPA to reclassify the facility as a generator only and to terminate their interim status. SKF indicated the facility had not "treated or disposed any hazardous waste", and that they "would see that any hazardous material generated would be disposed off-site within ninety days after

accumulation". Subsequent correspondence from SKF to MDNR again requested a determination of their regulatory status.

File material indicates the next RCRA inspection was conducted at the facility on August 28, 1985. The 1985 MDNR inspection report had only one unsatisfactory feature listed. Hazardous waste labels on the drums in storage did not include the EPA identification number or the EPA waste number. A barrel with a small amount of waste 1,1,1-TCA was also mentioned in the report as being in the raw material storage area. SKF was advised to relocate this drum to the hazardous waste storage building (Ref. 24).

SKF submitted the Generator Biennial Hazardous Waste Report, Calendar Year 1985, on March 6, 1986. The report identified the facility's EPA identification number as MOD990870396, not MOT300010345. The following wastes were indicated to be generated at the facility:

<u>Description</u>	<u>EPA Hazardous Waste No.</u>	<u>Amount</u>
Trichlorothene (sic)	F001	1,000 gallons
Kerosene Waste	D001	605 gallons
Parko Lubrize Waste	D006	4,050 pounds

Schiber Truck Lines (ILD006493191) and Bob's Home Service (MOD068521228) were identified in the report as transporters used. Clayton Chemical in Sauget, Illinois (ILD066918327) and Bob's Home Service in Wright City, Missouri (MOD068521228) were identified as facilities receiving the wastes shipped.

SKF resubmitted financial test mechanism information for the facility on March 27, 1986.

In August, 1986, SKF notified by letter the Metropolitan St. Louis Sewer District, the City of St. Louis Fire Marshall, the MDNR and the State of Illinois Environmental Protection Agency (IEPA) that the McQuay-Norris facility in St. Louis had ceased all manufacturing activities on July 31, 1986. Correspondence addressed to the MDNR stated that all hazardous wastes were disposed of according to USEPA and MDNR regulations. It further indicated that three disposal facilities were used for the waste disposal. They were Ashland Chemical, Ace Oil Service, and Clayton Chemical in Illinois. The letter stated that to facility personnel's knowledge, there were no hazardous wastes left at the site. The letter did not indicate the disposition of production line

equipment, nor did it detail any other closure information. The letter also indicated that during the course of its operating history it had been issued two EPA identification numbers (MOT300010345 and MOD990870396).

A letter from the MDNR dated November 3, 1986 responded to a claim from SKF that they were no longer subject to comply with the financial requirements of Subpart H, 10 CSR 25-7.265 and 40 CFR 265, because the St. Louis facility had been closed. MDNR stated that they held no records which documented an approved and certified closure of the facility, nor a termination of the facility's interim status. The MDNR instructed SKF to request termination as an interim status facility and verify closure or to submit information held by the facility which would indicate such matters had been addressed. Until closure of the facility could be verified, SKF was advised that they must continue to comply with regulations.

A letter from SKF to the MDNR dated November 11, 1986 stated that written requests had been directed to the EPA and MDNR concerning the facility's interim status. The letter also stated "Although we have no written response on record from EPA, our people at these locations did obtain verbal approval from EPA on the termination of our interim status." As there had been no further response from the EPA or the MDNR on the matter, SKF stated they had operated only as a generator, and had not treated, stored or disposed of any hazardous waste at the site. SKF maintained they considered financial regulatory requirements to no longer apply to their facility. They further maintained that if additional steps were necessary to terminate their interim status, state and federal agencies should have notified them.

On April 21, 1987, SKF requested an administrative change of their interim status at the St. Louis facility to a "generator only" status. The letter stated that the facility had never treated and/or disposed of any hazardous waste on-site, and that all hazardous wastes had been shipped to an off-site disposal facility within ninety days of accumulation.

A letter from SKF to MDNR on June 8, 1987 indicated that the facility had not yet been notified of a determination of the facility's regulatory status. The letter stated that SKF had not reissued the financial assurance letters required of TSD facilities, as the matter was still pending.

The next inspection of the SKF facility documented in the file material reviewed occurred on December 13, 1988, after the facility had ceased operation on July 31, 1986. The inspection report indicated that sufficient documentation had never been supplied by the facility to indicate they had never used their interim status,

thereby permitting the administrative release of the facility from their interim status. The report stated that the storage facility was not closed in accordance with 40 CFR 265 Subpart G, nor had the facility complied with the financial requirements of 40 CFR 265, Subpart H.

The report indicated that during the inspection, which occurred approximately three years after closure of the facility, no evidence of hazardous waste storage or spillage on the site was observed. It also noted the new housing development which had been constructed to the east and northeast. In this inspection report, MDNR indicated that they had received and reviewed a copy of the environmental risk assessment prepared by RSI. From the information included in the risk assessment and information received from SKF, the MDNR stated that the St. Louis facility had been unable to conclusively document that it had never used its interim status (Ref. 25).

The 1991 MDNR inspection report indicated unsatisfactory features as failure to have closure documentation certified by an independent, registered engineer and failure to document financial insurance for sudden accident liability. This report noted that the facility had repeatedly requested a reclassification from interim status to generator only. The report commented that if SKF wished to pursue cancellation of its TSD status to generator only status, then the 1984 inspection report stating that hazardous waste had been stored for over ninety days must be addressed. The report further stated that until a decision was made on the site's status, the requirements under 40 CFR 265 has incorporated 10 CSR 25-7.265 still apply (Ref. 26).

### **3.0 ENVIRONMENTAL SETTING**

This section provides information necessary to evaluate the potential impact of an environmental release to area soil, surface water, and groundwater receptors.

#### **3.1 Water Supply**

Potable water for the area is supplied by the City of St. Louis, Missouri and the St. Louis County Water Service (Refs. 27,28). The water sources for the City of St. Louis and St. Louis County water treatment works are outside of the site's four-mile radius and upstream with respect to surface water flow. There are no surface water intakes for drinking water use within 15 miles downstream of the site.

MDNR identified nine wells within a four-mile radius of the site. Five of the nine wells are described as sewer test holes. The remaining wells did not list a use designation and their current status is unknown. The well closest to the project site is in Section 30, Township 45 North, Range 7 East. This well was dug between 1866 and 1869 for the City Sanitarium. In 1940, it was reported that an extension of the east wing of the main building had been built over the well. Copies of representative well logs are provided in Appendix A. There are no wellhead protection areas in Missouri at this time.

Wastewater from the facility as well as most surface runoff water is intercepted and discharged to the Metropolitan Sewer District (MSD). The Lemay Treatment Plain at 201 Hoffmeister in St. Louis, Missouri serves the area where the site is located. (Ref. 30).

### 3.2 Surface Waters

The area watershed is the upper Mississippi River Basin (Ref. 1). The Soil Conservation Service (SCS) identifies the watershed areas as sub-basin 050010 (Ref. 31). The USGS catalogs the area as hydrologic unit 07140101 (Ref. 31).

The surface water drainage pathway from the facility property is to the north. The majority of the surface water runoff from the site flows into storm sewer drains on-site or into storm sewer drains which are located in the curblines of Marconi Avenue and Bischoff Avenue. This water flows into the combined storm and sanitary sewer system and is treated at the LeMay Treatment Plant which is located near the confluence of the River Des Peres and the Mississippi River. Any water which is not intercepted by the storm sewer drains, flows north approximately ½ mile to the River Des Peres Drainage Channel. This channel flows to the west initially and eventually circles around to the south and then east until it drains into the Mississippi River at approximately Mile No. 172. At this point, the water has traveled a downstream distance of approximately 10 miles.

MDNR classifies 1.5 miles of the River Des Peres from the mouth to Gravois Creek as a Class P stream or stream that maintains permanent flow even in drought periods (Ref. 32). For one mile above Gravois Creek, up to Morgan Ford Road, the River Des Peres is classified as a Class C stream or a stream that may cease flow in dry periods but maintain permanent pools which support aquatic life. Use designations for the River Des Peres are Livestock and Wildlife Watering (LWW) and Protection of Warm Water Aquatic Life and Human Health-Fish Consumption (AQL) (Ref. 32).

### 3.3 Area Soil, Geology and Hydrology

The SKF site is located in the Central Lowland physiographic province of the United States (Ref. 31). Within this province, it is situated in the Dissected Till Plains Region (Ref. 31). This region is chiefly developed on glacial material deposited on sedimentary rocks, mostly of Pennsylvanian age. This is a region of mixed hills and plains with the site occurring in the extreme southwest of the region near the edge of the inferred southern limit of glaciation.

Overburden in the area is categorized as the Fishpot-Urban land complex (Ref. 33). The soil at the SKF site consists of Urban land with intermingled areas of gently sloping, poorly drained Fishpot soils of a 0 to 5 percent slope (Ref. 33).

Typically, the surface layer of the Fishpot soil not covered by Urban development, is very dark grayish brown friable silt loam about one inch thick (Ref. 33). The next layer, to a depth of about 47 inches, consists of multi-colored silt loam fill material that contains cinders, brick, concrete and other rubble (Ref. 33). Below the reworked material to a depth of about 60 inches is a buried soil (Ref. 33). It is mottled grayish brown and brown firm silt loam in the upper part and mottled grayish brown, brown and dark yellowish brown, friable silty clay loam in the lower part (Ref. 33). In places, the fill material contains more than 20 percent fragments of manmade materials (Ref. 33).

The Urban land, covered with streets, parking lots, and buildings, is impervious to water. Permeability is moderately slow in the Fishpot soils (0.2 to 0.6 inches/hour) and surface runoff is rapid in the complex (Ref. 33). Reaction ranges from medium acid to neutral throughout the soil column (pH 5.6 to 7.3) (Ref. 33). The natural fertility is medium, and organic matter content is very low (0.5 to 2 percent) (Ref. 33). The available water capacity is very low (0.10 to 0.24 In/In) and the shrink-swell potential is moderate (Ref. 33).

The presence of an alluvial aquifer does not appear likely in the Urban soil column. These types of Loessel tills constitute a very "tight" soil and are essentially not water yielding (Ref. 33).

On a regional basis, the site lies on the eastern slope of the Cheltenham Syncline (Ref. 34). Paleozoic sedimentary rocks, of Pennsylvanian age, underlie the SKF site (Ref. 34). The rock formations of the Marmaton Group, Desmoinesian Series, comprise the upper bedrock units at the site (Ref. 34). The Desmoinesian Series

is composed of alternating beds of limestone and shale (Ref. 34). The Marmaton group is underlain by the Cherokee Group with an average thickness of about 310 feet (Ref. 34). The Cherokee Group is comprised primarily of limestone and shale formations with sandstone, siltstone, clay and coal beds occurring in lesser amounts throughout the stratigraphic succession (Ref. 34).

The regional bedrock aquifer beneath the site is known as the Central Midwest Regional Aquifer (Ref. 14). The regional aquifer is informally divided into the Plains subregion and the Ozark subregion. The site occurs at the extreme northern and eastern edge of the Ozark Plateaus aquifer in the Ozark subregion. The Plains subregion contains mostly saltwater, the Ozark subregion holds mainly freshwater (Ref. 34).

The Ozark Plateaus aquifer system is a regional flow system (Ref. 34). The regional flow in the site area is toward the northeast, away from an east-west trending groundwater divide in southern Missouri, and toward large rivers, such as the Missouri, Mississippi, and Arkansas Rivers (Ref. 34).

The aquifer system is divided into three aquifers, the uppermost being the Springfield Plateau Aquifer, a sequence of water yielding Mississippian limestones (Ref. 34). Lying above the Springfield Plateau Aquifer is the Western Interior Plains Confining System and below the aquifer, the Ozark confining unit (Ref. 34). The Marmaton Group, of the Desmoinesian Series, identified earlier as the group of rocks occurring immediately beneath the site, are identified as a portion of the stratigraphic units comprising the Western Interior Plains confining system (Ref. 34).

The depth of the Western Interior Plains Confining system below the site to the top layer of the St. Louis limestone, which is the uppermost formation of the Springfield Plateau Aquifer, is approximately 800 to 900 feet (Ref. 34).

Water from the Springfield Plateau Aquifer is a calcium bicarbonate type (Ref. 34). The dissolved-solids concentration is generally less than 300 milligrams per liter (Ref. 34). The chloride concentration is less than 10 milligrams per liter and the sulfate concentrations are also generally less than 10 milligrams per liter (Ref. 34). The lateral hydraulic conductivity of the Springfield Plateau Aquifer is  $2.5 \times 10^{-4}$  (Ref. 34).

Although the Springfield Plateau Aquifer is widely used as an aquifer in the western and southwestern areas of Missouri, in the site area and in the surrounding county, the aquifer yields are small to moderate (5 to 50 gpm.) and the aquifer is not considered as favorable for use (Ref. 34). Therefore, the Springfield Plateau Aquifer does not appear to be used for municipal or industrial supply in the vicinity of the site.

### 3.4 Area Climatology

The former SKF site is located near the confluence of the Missouri and Mississippi Rivers and has a modified continental climate. The weather is influenced by the warm moist air from the Gulf of Mexico and cold air masses from Canada.

The National Climatic Data Center compiled the following information for the St. Louis area for the period 1961 through 1990, inclusive (Ref. 35).

In winter, the average temperature is 33° F, and the average daily minimum temperature is 25° F. The lowest temperature on record, -18° F, occurred in St. Louis in January 1985. In summer, the average temperature is 77° F, and the average daily maximum temperature is 87° F. The highest recorded temperature, which occurred in August 1984, was 107° F.

The average total annual precipitation is 33.91 inches. The three winter months are the driest while the spring months of March through May are normally the wettest. The heaviest one-day rainfall during the period of record was 4.91 inches in April 1979. Thunderstorms occur on about 45 days each year, and most occur in the summer.

The average seasonal snowfall is 18 inches. On the average, seven days have at least one inch of snow on the ground.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 83 percent. The sun shines 70 percent of the possible time in summer and 60 percent in winter. The prevailing wind is from the south. Average annual wind speed is 9.7 miles per hour. The average wind speed is highest in March and April averaging about 11.5 miles per hour.

### 3.5 Critical Habitats/Endangered Species

The Missouri Department of Conservation provided the following information regarding threatened and endangered species within a four-mile radius of the site (Ref. 36). After examining map and computer files, their records indicated the following sensitive species or communities are known to occur near the project site:

Narrow-leaved coneflower (Enchinacea augustifolia) is state-listed as Status Undetermined.

Straw sedge (Carex straminea) is state-listed as Status Undetermined.

Hedge nettle (Stachys hyssopifolia var. ambigua) is state-listed as Extirpated.

Auriculate false foxglove (Tomanthera auriculata) is a federal candidate for listing as Threatened or Endangered and is state-listed as Rare.

Sicklefin chub (Machrohybopsis meeki) was known from the Mississippi River. This species is a federal candidate for listing as Threatened or Endangered and is state-listed as Rare.

The Department of Conservation further stated that it was the general opinion of their staff that the site would not be likely to adversely impact any of the listed species (Ref. 36). No threatened or endangered species, or high-quality natural communities were observed and/or identified on-site during the VSI.

### 4.0 VISUAL SITE INSPECTION

The VSI of the former SKF site was performed February 24, 1992. The VSI focused on the past and present waste streams at the facility in order to identify all SWMUs and to collect information beneficial in assessing their potential to release hazardous waste or constituents to the environment. Weather conditions at the site during the VSI were overcast, with temperatures of approximately 50° F.

During the VSI, two MDNR representatives and two Andersohn Properties representatives accompanied the Terracon investigation team.

#### **4.1 Visual Site Inspection Participants**

The following personnel were present during the VSI:

Stacy McCrea-Robertson  
Industrial Hygienist  
Terracon Environmental, Inc.

Brad Wohler  
Geologist  
Terracon Environmental, Inc.

Donald Kerns  
Environmental Engineer  
MDNR-Jefferson City

Bob Carlson  
Environmental Specialist  
MDNR-St. Louis

Robert Andersohn  
President  
Andersohn Properties, Inc.

Sharon McVey  
Vice President  
Andersohn Properties, Inc.

#### **4.2 Solid Waste Management Units (SWMUs) and Areas of Concern (AOCs)**

As a result of the VSI, five SWMUs and four AOCs were identified at the site. The SWMUs include a refuse dumpster at Building Number 5; two dumpsters at Building Number 2A; the area east of Building Numbers 4 and 25 where a former release of kerosene occurred, facility buildings had been demolished, and where former storage areas were located; the former location of Building No. 30 used formerly for storage of hazardous waste; and the former location of Building Numbers 18, 22, 21, 23, and 24, used historically for storage and chrome plating operations. AOCs identified include a room in Building Number 1 where hydrochloric acid was stored and staining of the floor was noted beneath a hot water heater/furnace; areas in Building Nos. 3 and 4 where staining was noted beneath transformers and other electrical equipment; Building Number 2A where plating operations formerly occurred; and the area south of Building Number 5 where four underground storage tanks have been abandoned in place.

TABLE 4-1

**SWMU IDENTIFICATION SUMMARY**  
**SKF Industries, Inc.**  
**St. Louis, Missouri**  
**EPA I.D. MOT300010345**

SWMU Number	Name of Unit	Years Operated	Wastes Managed	Evidence of Release
1	Dumpster, Building No. 5	Unknown	General Refuse	None observed or documented
2	Dumpsters, Building No. 2A	Unknown	General refuse; Solid wastes from mill works operation	None observed or documented
3	Eastern Portion of Site, Including Area Used Formerly for Drum Storage	65 *	**	Documented release of kerosene
4	Former Site, Building No. 30, Hazardous Waste Storage Area	65 *	**	None observed or documented
5	Former Location of Building Nos. 18, 21, 22, 23, and 24, Used Historically for Storage and Chrome Plating Operations	65 *	**	None observed or documented

\* Approximate years of facility's operation

\*\* See SWMU description

**TABLE 4-2****AOC IDENTIFICATION SUMMARY**

**SKF Industries, Inc.  
St. Louis, Missouri  
EPA I.D. MOT300010345**

<b>AOC Number</b>	<b>AOC Name</b>	<b>Years Operated</b>	<b>Materials Managed</b>	<b>Evidence of Release</b>
<b>1</b>	<b>Room on Lower Floor, Building No. 1</b>	<b>Unknown</b>	<b>Hydrochloric Acid; Oil Stain</b>	<b>Oil stain noted on floor</b>
<b>2</b>	<b>Transformers and Switch Gear Equipment, Building Nos. 3 and 4</b>	<b>Unknown</b>	<b>Transformer Oils (Reportedly non-PCS)</b>	<b>Stains Noted Beneath Electrical Equipment</b>
<b>3</b>	<b>Building No. 2A, Former Location of Plating Operations</b>	<b>65*</b>	<b>See AOC Description</b>	<b>Staining reportedly present on wood floor; floor subsequently removed</b>
<b>4</b>	<b>Underground Storage Tank Area</b>	<b>15</b>	<b>Gasoline</b>	<b>None documented or observed</b>

\* Years of facility's operation

**SWMU NUMBER:** 1

**SWMU NAME:** Dumpster, Building No. 5

**SWMU DESCRIPTION:** A blue BFI trash dumpster measuring approximately 6 feet by 3 feet by 3 feet was located on the north side of Building No. 5. The dumpster, labeled "No Hazardous Waste" was empty during the VSI.

**DATES OF OPERATION:** No information was available which indicated when the dumpster was installed at the facility.

**WASTES MANAGED:** The dumpster is presumed to manage general refuse.

**RELEASE CONTROLS:** No release controls were noted to be associated with the dumpster.

**RELEASE HISTORY:** No information was available which documented the release of any material from the dumpster.

**MIGRATION  
PATHWAYS:** If a release of general refuse from this SWMU were to occur, the primary migration pathway would be to surrounding soil.

**PHOTOGRAPH NO.:** 3

SKF Industries  
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**SWMU NUMBER:** 2

**SWMU NAME:** Dumpsters, Building No. 2A

**SWMU DESCRIPTION:** Two dumpsters, each measuring approximately 6 feet by 6 feet by 6 feet, were noted on the north side of Building Number 2A, adjacent to the loading dock.

**DATES OF OPERATION:** No information was available which indicated when the dumpsters were installed at the facility. They were in use on the day of the VSI.

**WASTES MANAGED:** The dumpsters are currently being used by Shamrock Building Supply for disposal of refuse, sawdust, scrap lumber and other miscellaneous materials from the milling operation.

**RELEASE CONTROLS:** No release controls were noted to be associated with the dumpsters.

**RELEASE HISTORY:** No information was available which documented the release of any material from the dumpsters.

**MIGRATION PATHWAYS:** If a release of construction debris-type materials from this SWMU were to occur, the primary migration pathway would be to surrounding soil.

**PHOTOGRAPH NO.:** 2

**SWMU NUMBER:** 3

**SWMU NAME:** Eastern Portion of Site, Including Area Used Formerly for Drum Storage

**SWMU DESCRIPTION:** This SWMU consists of the area east of Building Numbers 25 and 4. Several buildings (Numbers 6, 12, 26, 26A, 32, 28, 7, 20, 29, and parts of 25) were demolished and/or removed sometime after the facility closed in 1986. Concrete rubble, metal, brick fragments, and some wood remain scattered on the surface of the area. Building Numbers 26A, 28, 7, and 20, were formerly located in this area, and housed a welding shop, garage, and two warehouses, respectively (Ref. 5). Uses of Building Numbers 26, 32, and 29 were not noted in the file material available for review.

A triangular area 375 square feet in size is located in the southeast corner of this portion of the property. The area was designated for drum storage in the facility's Part A permit application submitted in 1980. No further references were made to this area in other file material reviewed.

Two above-ground tanks/solvent recovery systems were reportedly located in this area of the site during the facility's operation, as well. Available information indicates the tanks/systems were used to recover and/or store kerosene, 1,1,1-TCA and 1,1,1-TCE (Ref. 23).

Building No. 26 which housed the welding shop reportedly had a heat treat furnace that was used to harden tools. The process involved an immersion in a bath containing a 15 percent solution of sodium cyanide (Ref. 5).

In addition to the above items, a 15-cubic yard dumpster, identified in the Part A permit application, was located in this area as well (Ref. 13).

**DATES OF OPERATION:** Available information indicates that this area of the facility had been used for numerous manufacturing activities since plant operations began in 1919. Buildings in the area were demolished sometime after the facility ceased operation in 1986. The area is presently vacant. However, townhomes have been constructed nearby on what once was the northeast portion of the manufacturing site.

**WASTES MANAGED:** Kerosene, 1,1,1-TCA, and 1,1,1-TCE were reportedly managed in the solvent recovery system/tanks formerly located in this area (Ref. 23). The weld shop generated waste cyanide liquids and sludges as part of the heat treatment process (Ref. 5). Information was not available on the types of wastes/materials which were stored in the area designated for drum storage or in the 15-yard dumpster (Ref. 13).

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**SWMU NUMBER:** 3 (Continued)

**RELEASE CONTROLS:** No information was available concerning the existence of release controls associated with the items referenced in this SWMU description. No release controls were noted in the area on the day of the VSI.

**RELEASE HISTORY:** Available information indicates a release of kerosene occurred from the solvent recovery system/tank formerly located in this area, sometime prior to 1986 (Ref. 5, 14, 23). The 1985 Sitex report noted the release of kerosene from the tanks/solvent recovery system. A soil sample collected in the area contained 60 ppm of petroleum hydrocarbons; no TCA was detected in the sample (Ref. 5)

**MIGRATION  
PATHWAYS:** The primary migration pathway for a release of material from this SWMU, in decreasing order of likelihood, would be soil, surface water, air and groundwater.

**PHOTOGRAPH NOS.:** 21, 22, and 23

**SWMU NUMBER:** 4

**SWMU NAME:** Former Site of Building Number 30, Hazardous Waste Storage Area

**SWMU DESCRIPTION:** The area formerly occupied by Building Number 30 is north of Building Number 25, on the northern portion of the site. The building was reportedly used for storage of hazardous waste. The building was demolished and removed sometime subsequent to closure of the facility in 1986. The area is presently covered with grass and gravel. No signs of staining or stressed vegetation were noted in the area during the VSI.

**DATES OF OPERATION:** Information documenting the exact year Building Number 30 was constructed was not available in the file material reviewed. The building was reportedly used originally for storage of machinery and then was later reportedly used for storage of hazardous waste. Exact dates of use as a hazardous waste storage area were not available. The RCRA Part A permit application filed in 1980 does not identify Building Number 30 as hazardous waste storage area (Ref. 13). The 1984 MDNR inspection report and the RSI report dated July 8, 1986, however, document the use of the building for this purpose (Ref 5, 23). The structure was demolished sometime after the facility ceased operation in 1986.

**WASTES MANAGED:** In a letter dated April 14, 1989 from SKF to MDNR, SKF indicated that the building had only been used for the storage of waste oils (Ref. 38).

**RELEASE CONTROLS:** Information on release controls associated with Building No. 30 was not available in the file material reviewed.

**RELEASE HISTORY:** There is no reference to a spill or leakage of materials stored in Building 30 in the file material reviewed. The area is presently covered with grass and gravel; no staining of soil or stressed vegetation noted.

**MIGRATION PATHWAYS:** The primary migration pathway for this SWMU, in decreasing order of likelihood, would be soil, surface water, groundwater and air.

**PHOTOGRAPH NO.:** 18

**SWMU NUMBER:** 5

**SWMU NAME:** Former Location of Building Numbers 18, 22, 21, 23, and 24, Used Historically for Storage and Chrome Plating Operations

**SWMU DESCRIPTION:** Building Numbers 18, 22, 21, 23, and 24 were formerly located in the north central portion of the site, in the center of the two wings of the main U-shaped building complex (Building Numbers 2, 2A, 3, 3A, 4, and 25). During the facility's operating history Building Number 18 was reportedly used for storage; Building Numbers 21 and 23 as chrome plating facilities, Number 22 as a maintenance facility; and, Building Number 24 as a laboratory and printing facility (Ref. 14) The buildings were reportedly demolished and removed sometime after 1986.

In the southwest corner of this area, a storage area approximately 90 square feet in size was delineated in the RCRA Part A permit application (Ref. 13). Further reference to the use of this area for storage of hazardous wastes was not noted in the remaining file material available for review.

During the VSI the entire area was noted to be paved with asphalt or concrete. A concrete truck ramp is located in the area adjacent to Building Number 3A. Small oil stains were noted on the paved area. A pile of pallets which were being used by Shamrock Building Supply was observed on the east side of Building Number 2A.

**DATES OF OPERATION:** Buildings on-site were originally constructed in 1919 (Ref. 14) and demolished sometime after 1985.

**WASTES MANAGED:** Available information did not document what materials/wastes were stored in the hazardous waste storage area which is included in this SWMU description. Wastes generated in chrome plating operation included sludge collected from the tank bottoms on chrome pre-treatment line; sludge collected from tanks containing tech flake and Unichrome solutions; and sludge removed from post-chrome treatment baths.

**RELEASE CONTROLS:** Information on release controls associated with activities in these buildings was not available in the file material reviewed.

**RELEASE HISTORY:** There is no documentation of spills or leaks from the chrome plating operation or elsewhere in this SWMU.

**MIGRATION PATHWAYS:** The primary migration pathway from this SWMU, in decreasing order of likelihood, would have been soil, surface water, air and groundwater.

**PHOTOGRAPH NOS.:** 3, 4, 5, 15, 16, and 17

**AOC NUMBER:** 1

**AOC NAME:** Room on Lower Floor, Building Number 1

**AOC DESCRIPTION:** During the VSI, a room in the lower level of Building Number 1 contained a partially full 35-gallon drum labeled "hydrochloric acid" and "descaler-delimer". There was, however, no evidence of spillage around the drum.

A dark oily stain was noted on the floor beneath a hot water heater/furnace in the room. Other miscellaneous items, including paper waste, a mattress, boards, pipes, and plastic were noted in the area as well.

**DATES OF OPERATION:** The 35-gallon drum of hydrochloric acid was noted in the RSI assessment report dated March 6, 1991. No information was available as to when the staining of the floor near furnace/hot water heater occurred.

**MATERIALS MANAGED:** Hydrochloric Acid

**RELEASE CONTROLS:** There were no release controls associated with the materials stored in this area.

**RELEASE HISTORY:** There was no evidence of a release from the drum containing hydrochloric acid. As noted previously, however, there was staining noted around the hot water heater/furnace located in the room.

**MIGRATION PATHWAYS:** The primary migration pathway from this SWMU, in decreasing order of likelihood would be air, surface water, soil and groundwater.

**PHOTOGRAPH NOS.:** 28, and 29

**AOC NUMBER:** 2

**AOC NAME:** Transformers and Switch Gear Equipment, Building Number 3 and 4

**AOC DESCRIPTION:** Two areas in Building Number 4 and an alleyway between Building Numbers 3 and 4 contain electrical transformers and other related electrical equipment. Staining of concrete floors, pavement and soil was observed variably beneath the transformers in each area. Sitex Environmental, Inc. sampled oil from these transformers and other electrical equipment and analyzed for PCBs as part of a Phase I Environmental Assessment of the property in 1991. Analytical results from the sampling endeavor indicated oils contained within the transformers were non-detectable for PCBs (Ref. 9).

**DATES OF OPERATION:** Installation dates for the transformers were not available in the file material reviewed.

**MATERIALS MANAGED:** Transformer Oils

**RELEASE CONTROLS:** There were no release controls associated with the electrical equipment with the exception of the metal cabinet enclosures which are an integral part of the equipment design.

**RELEASE HISTORY:** Leakage of the transformer oils had been observed during an environmental assessment conducted on February 21, 1991 (Ref. 14). Information on the dates which leakage from the electrical equipment occurred was not documented in the file material available for review.

**MIGRATION PATHWAYS:** The primary migration pathway for the transformer oil, in decreasing order of likelihood would be soil, surface water, groundwater and air.

**PHOTOGRAPH NOS.:** 9, 10, and 12

**AOC NUMBER:** 3

**AOC NAME:** Building 2A, Former Location of Plating Operations

**AOC DESCRIPTION:** Plating/coating operations other than chrome plating such as zinc-phosphate, manganese-phosphate (Parkolubrite)/Parkolene, tin, and tin-nickel reportedly occurred in Building No. 2A during SKF's operational history (Refs. 5, and 23). Building Number 2A is presently leased to Shamrock Building Supply Company, who uses the area for a carpentry shop.

**DATES OF OPERATION:** Building Number 2A was built in 1946 (Ref. 14). Exact dates when the referenced plating operations began and/or ceased at the facility were not available in the file material reviewed. The tin-nickel plating process was reportedly discontinued in 1983. Available information states that various plating processes have occurred at this site for over 65 years (Ref. 14). All manufacturing activities ceased in 1986 (Ref. 5).

**MATERIALS MANAGED:** Wastes generated in Building No. 2A included those generated in the rust removal pretreatment process: sludge from the sulfuric acid tank and wastewater from the rinse tank.

Wastes generated on the tin plating line included: sludge/paste (water leached beads/grit dust) generated from grit blasting of rings in pretreatment process; water containing soluble oil discharged from tin plating line; wastewater from cold water rinse; sludge from plating tanks; and, oily sludge from gulf cut solution tank.

Wastes generated on the zinc phosphate line included the following: wastewater from hot and cold water rinses; and sludge from plating tanks.

Wastes generated on the manganese-phosphate (Parkolubrite)/Parkolene line included the following: rinse/overflow water; solution from tanks; and, sludge from cleaning of Parkolene and Detrex tanks and Parkolubrite tanks.

Wastes from other rust removal processes in operation at the facility included "cyanide and endox-free, bio-degradable" sludge as well as waste cyanide liquids and sludges.

Wastes generated on the plating lines during the facility's operational history reportedly included the following hazardous materials: chromium, cadmium, tin, nickel, zinc, potassium hydroxide, sulfuric acid, cyanide and soluble oils.

**RELEASE CONTROLS:** Information on release controls associated with the plating processes were not available in the file material reviewed.

**AOC NUMBER:**

**3 (Continued)**

**RELEASE HISTORY:**

Available information indicates that the wood floor in Building Number 2A was covered with an oily material when Shamrock Building Supply moved in to the facility. The floor was reportedly removed after attempts to clean the wood proved unsuccessful. No other information is available concerning a release of materials from the plating operations.

**MIGRATION  
PATHWAYS:**

The primary migration pathway for this AOC would be, in decreasing order of likelihood, soil, surface water, groundwater and air.

**PHOTOGRAPH NO.:**

None available.

**AOC NUMBER:** 4

**AOC NAME:** Underground Storage Tank Area

**AOC DESCRIPTION:** Four USTs are located on the south side of Building No. 5. Each steel tank has a 1,000-gallon capacity. The tanks have reportedly been abandoned in placed and filled with gravel.

**DATES OF OPERATION:** Installation dates for the tanks were not available. Information provided to the MDNR in 1986 indicated that three of the tanks were approximately 6 years old and the use of those tanks ceased sometime in May, 1980 (Refs. 10 and 11). It appears from this information that use of the tanks was halted shortly after their installation. The tanks were abandoned sometime in 1985. The fourth tank was reportedly approximately 15 years old in 1986. The estimated date of its last use was April, 1986. The tank was reportedly abandoned soon thereafter (Ref. 11).

**MATERIALS MANAGED:** Gasoline is the only constituent which was listed for the four tanks contents (Refs. 10, and 11).

**RELEASE CONTROLS:** The three newest tanks reportedly had a fiberglass-reinforced plastic coating for external protection (Ref. 10).

**RELEASE HISTORY:** The March 6, 1986 Sitex report indicated that the three previously abandoned tanks were tested in 1985 and found to be intact (Ref. 14). In a memorandum dated July 19, 1991, the MDNR indicated they would attempt to ascertain if the USTs were closed properly.

**MIGRATION PATHWAYS:** The primary migration pathway for this AOC would be, in decreasing order of likelihood, soil, groundwater, surface water and air.

**PHOTOGRAPH NO.:** 32

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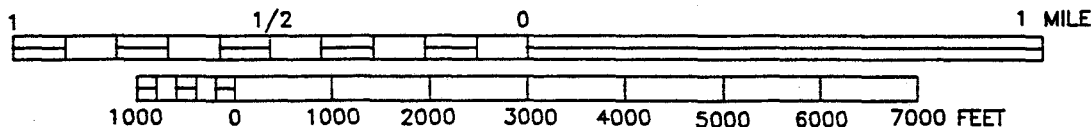
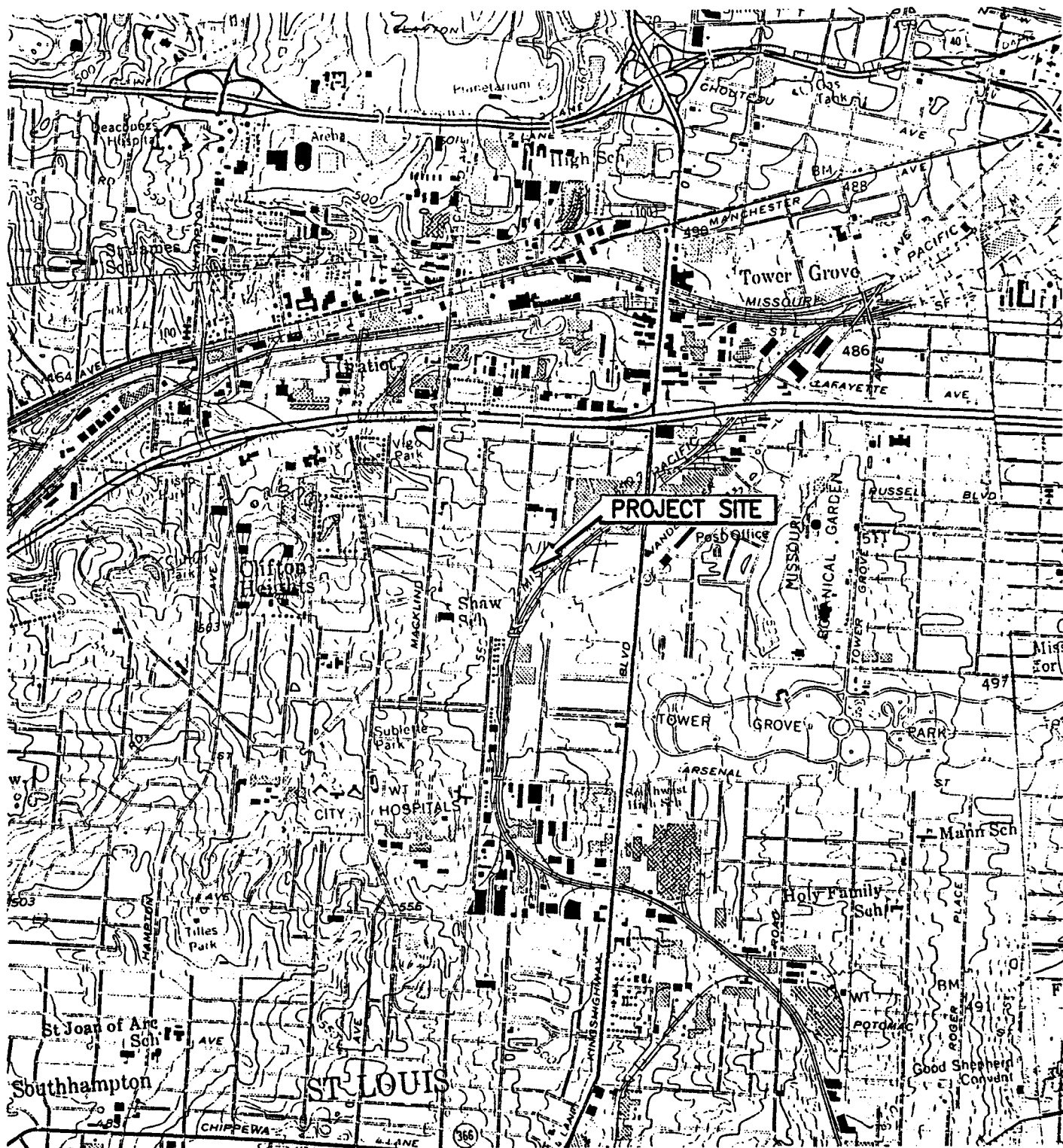


FIGURE 1  
LOCATION DIAGRAM  
SKF INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MO  
PROJECT NO. 50915160  
FILE NO. 1K160-1

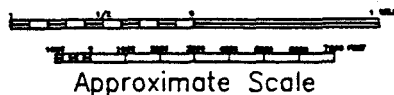
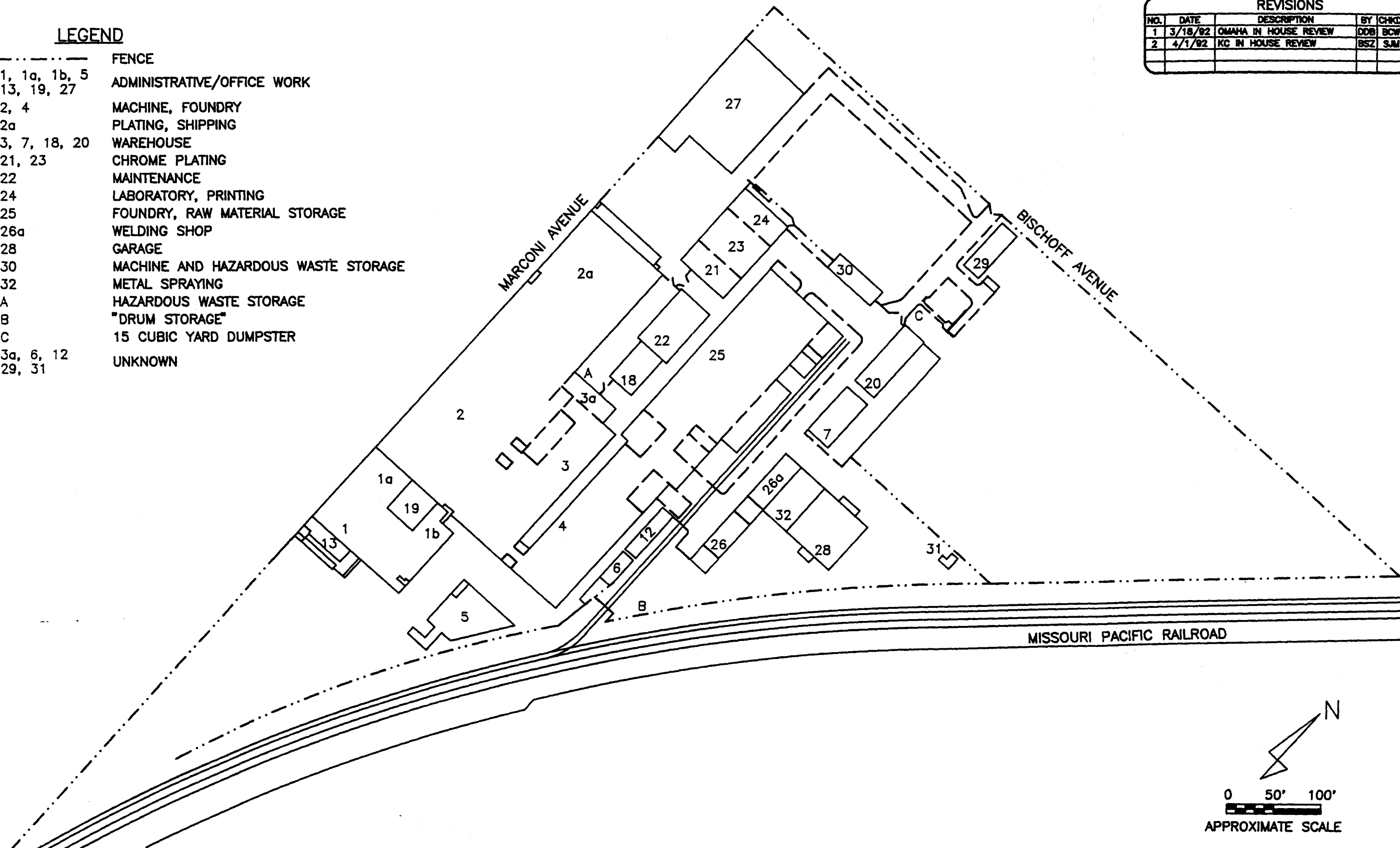


FIGURE 2  
4 MI. RADIUS SITE VICINITY MAP  
SKF INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MO  
PROJECT NO. 50915160  
FILE NO. 1K160-2

# LEGEND

- ..... FENCE
- 1, 1a, 1b, 5 ADMINISTRATIVE/OFFICE WORK
- 13, 19, 27
- 2, 4 MACHINE, FOUNDRY
- 2a PLATING, SHIPPING
- 3, 7, 18, 20 WAREHOUSE
- 21, 23 CHROME PLATING
- 22 MAINTENANCE
- 24 LABORATORY, PRINTING
- 25 FOUNDRY, RAW MATERIAL STORAGE
- 26a WELDING SHOP
- 28 GARAGE
- 30 MACHINE AND HAZARDOUS WASTE STORAGE
- 32 METAL SPRAYING
- A HAZARDOUS WASTE STORAGE
- B "DRUM STORAGE"
- C 15 CUBIC YARD DUMPSTER
- 3a, 6, 12 UNKNOWN
- 29, 31

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
1	3/18/92	OMAHA IN HOUSE REVIEW	DOB	BCW	BCW
2	4/1/92	KC IN HOUSE REVIEW	BSZ	SJM	STA



PROJ# 50915160	DRAWN BY: KMA
FILE 91160AF3.DWG	CHECKED BY: STA
DATE: MARCH 1992	SCALE: AS SHOWN

FORMER SKF SITE PLAN

SKF INDUSTRIES INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MISSOURI

7810 NORTHWEST 100th  
KANSAS CITY, MISSOURI 64153  
PHONE: (816) 891-7717  
FAX: (816) 891-7048

**Terracon**  
ENVIRONMENTAL, INC.

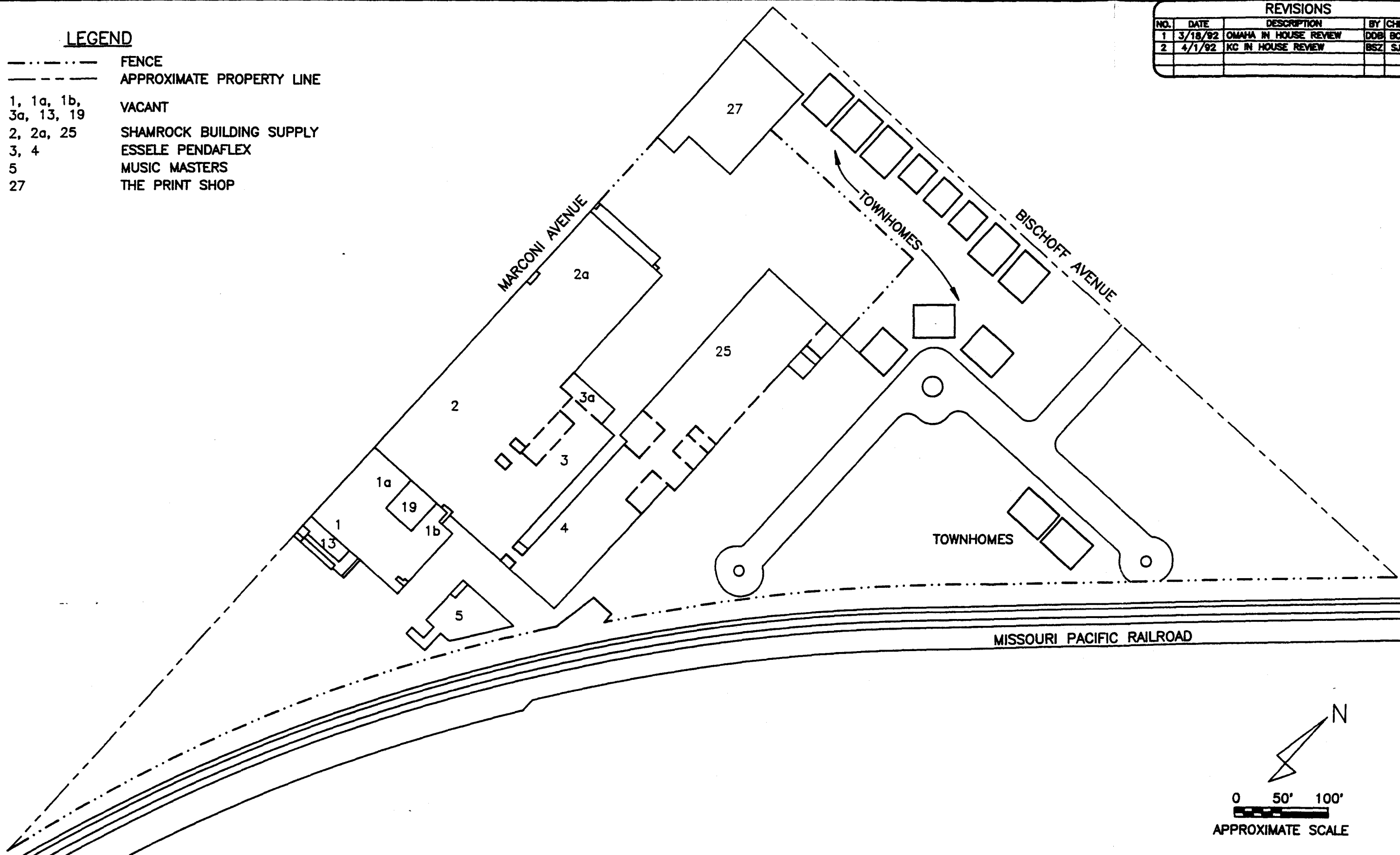
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# LEGEND

.....	FENCE
---	APPROXIMATE PROPERTY LINE
1, 1a, 1b, 3a, 13, 19	VACANT
2, 2a, 25	SHAMROCK BUILDING SUPPLY
3, 4	ESSELE PENDAFLEX
5	MUSIC MASTERS
27	THE PRINT SHOP

## REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
1	3/18/92	OMAHA IN HOUSE REVIEW	DOB	BCW	BCW
2	4/1/92	KC IN HOUSE REVIEW	BSZ	SJM	STA



PROJ# 50915160

DRAWN BY: KMA

FILE 91160AF4.DWG

CHECKED BY: STA

DATE: MARCH 1992

SCALE: AS SHOWN

1992 SKF SITE PLAN

SKF INDUSTRIES INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MISSOURI

7810 NORTHWEST 100th  
KANSAS CITY, MISSOURI 64153  
PHONE: (816) 891-7717  
FAX: (816) 891-7048

**Terracon**  
ENVIRONMENTAL, INC.

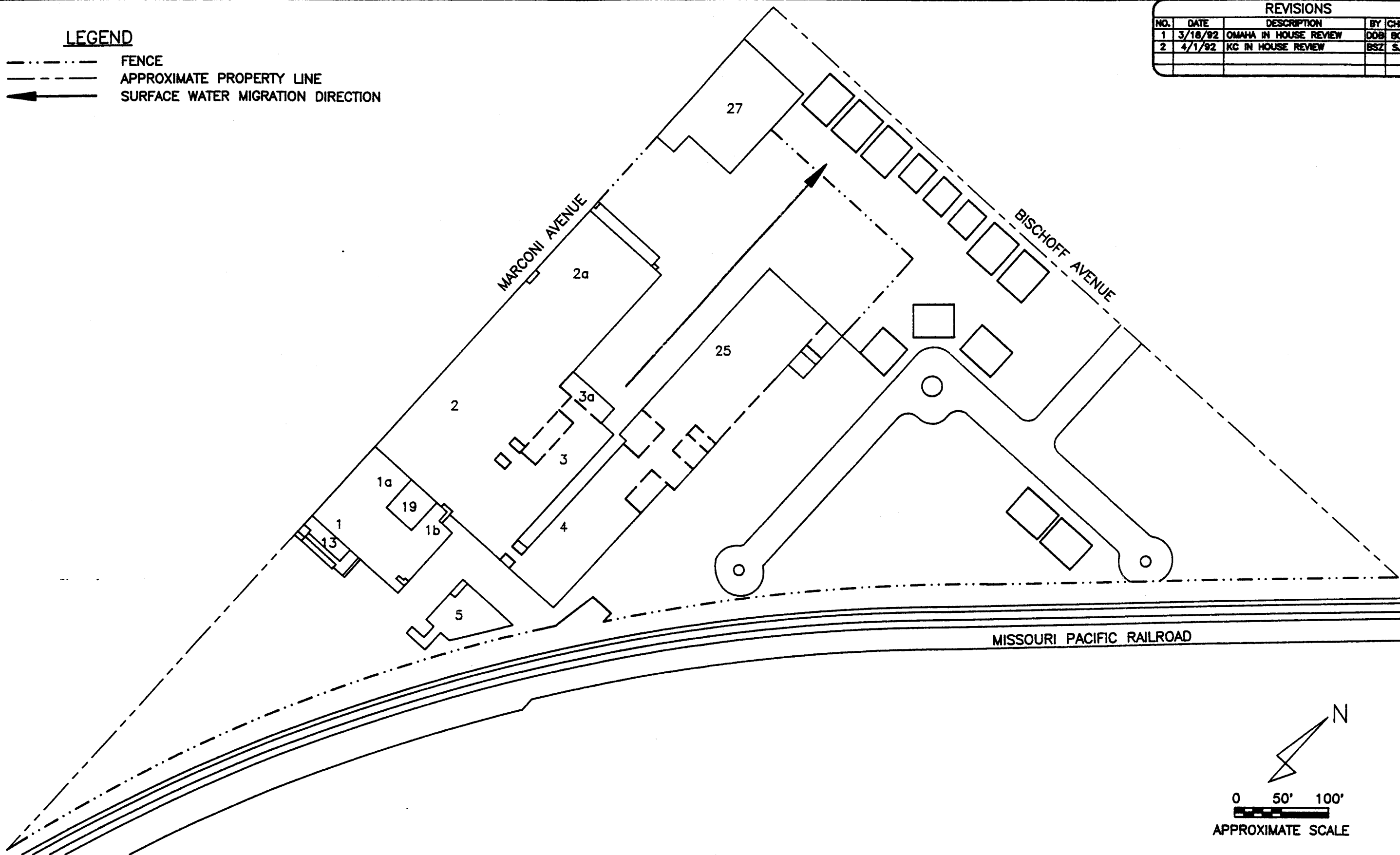
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# LEGEND

- FENCE
- - - APPROXIMATE PROPERTY LINE
- SURFACE WATER MIGRATION DIRECTION

## REVISIONS

NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
1	3/18/92	OMAHA IN HOUSE REVIEW	DOB	BCW	BCW
2	4/1/92	KC IN HOUSE REVIEW	BSZ	SAI	STA



PROJ# 50915160

DRAWN BY: KMA

FILE 91160AF5.DWG

CHECKED BY: STA

DATE: MARCH 1992

SCALE: AS SHOWN

SURFACE WATER MIGRATION DIRECTION

SKF INDUSTRIES INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MISSOURI

7810 NORTHWEST 100th  
KANSAS CITY, MISSOURI 64153  
PHONE: (816) 891-7717  
FAX: (816) 891-7048

**Terracon**  
ENVIRONMENTAL, INC.

F5

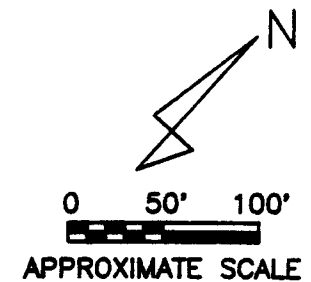
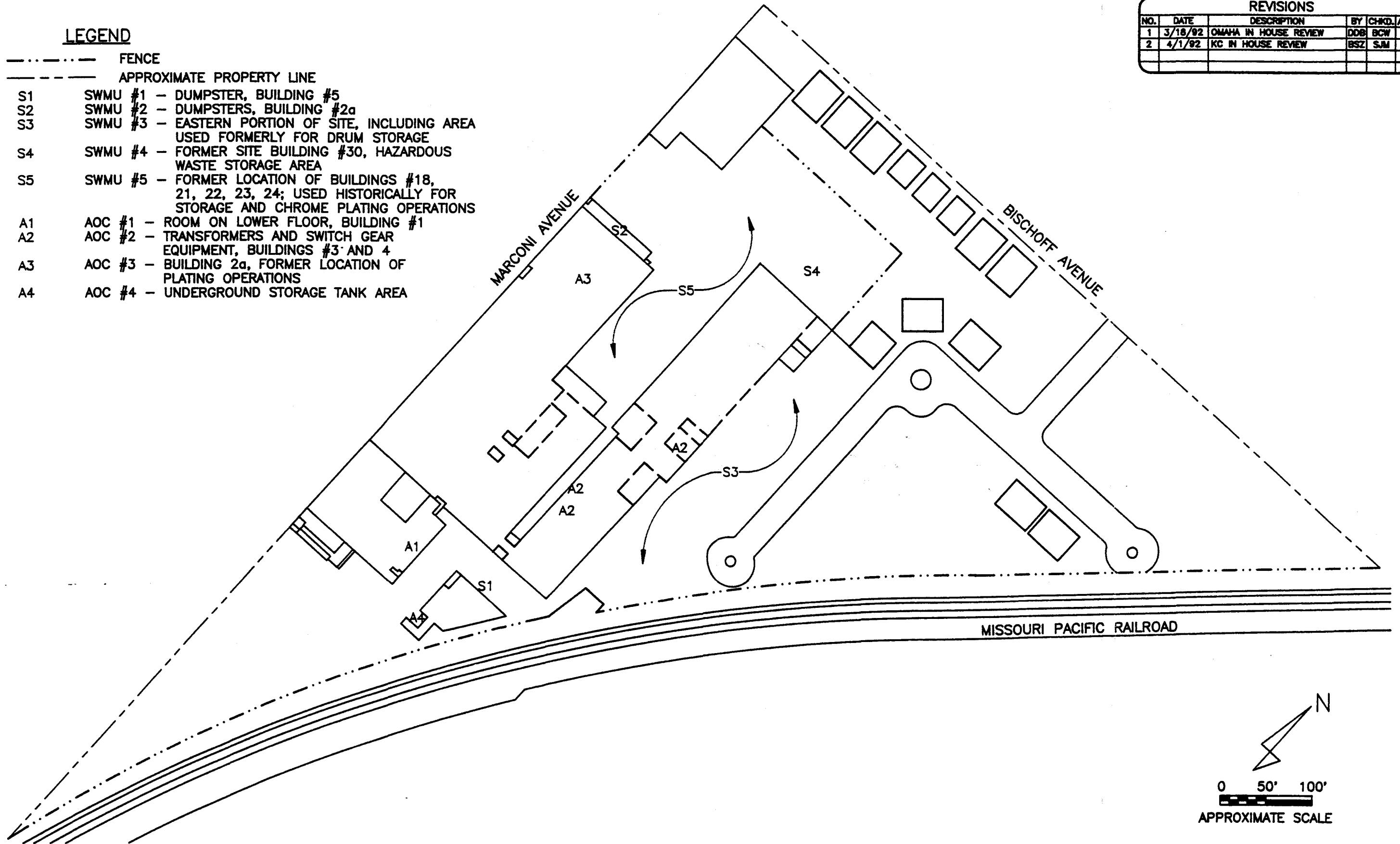
# LEGEND

--- FENCE

--- APPROXIMATE PROPERTY LINE

- S1 SWMU #1 - DUMPSTER, BUILDING #5
- S2 SWMU #2 - DUMPSTERS, BUILDING #2a
- S3 SWMU #3 - EASTERN PORTION OF SITE, INCLUDING AREA USED FORMERLY FOR DRUM STORAGE
- S4 SWMU #4 - FORMER SITE BUILDING #30, HAZARDOUS WASTE STORAGE AREA
- S5 SWMU #5 - FORMER LOCATION OF BUILDINGS #18, 21, 22, 23, 24; USED HISTORICALLY FOR STORAGE AND CHROME PLATING OPERATIONS
- A1 AOC #1 - ROOM ON LOWER FLOOR, BUILDING #1
- A2 AOC #2 - TRANSFORMERS AND SWITCH GEAR EQUIPMENT, BUILDINGS #3 AND 4
- A3 AOC #3 - BUILDING 2a, FORMER LOCATION OF PLATING OPERATIONS
- A4 AOC #4 - UNDERGROUND STORAGE TANK AREA

REVISIONS					
NO.	DATE	DESCRIPTION	BY	CHKD.	APPR.
1	3/18/92	OMAHA IN HOUSE REVIEW	DOB	BCW	BCW
2	4/1/92	KC IN HOUSE REVIEW	BSZ	SJM	STA



PROJ. # 50915160	DRAWN BY: KMA
FILE 91160AF4.DWG	CHECKED BY: STA
DATE: MARCH 1992	SCALE: AS SHOWN

## SWMU AND AOC LOCATIONS

SKF INDUSTRIES INC.  
2320 MARCONI AVENUE  
ST. LOUIS, MISSOURI

7810 NORTHWEST 100th  
KANSAS CITY, MISSOURI 64153  
PHONE: (816) 891-7717  
FAX: (816) 891-7048

**Terracon**  
ENVIRONMENTAL, INC.

F6

**APPENDIX A**

**REPRESENTATIVE WELL LOGS**

STATE OF MISSOURI  
DIVISION OF  
GEOLOGICAL SURVEY AND WATER RESOURCES

LOG NO. 19835	OWNER Northwestern. Cooperaage Co.	
COUNTY St. Louis	FARM	WELL NO.
T 45N	R 7E	DRILLER Haverstack Well & Equip
DATE		ELEV. Land 420
LOGGED BY CE Robertson Aug. 17, 1961		PROD. 260 Gpm. W/31' DD

REMARKS Casing Record: 59' of 8" Csg.  
12' of screen set 58 to 70'  
Screen Stainless Steel #40. Slot.  
Bottom pump 68' SWL 21'

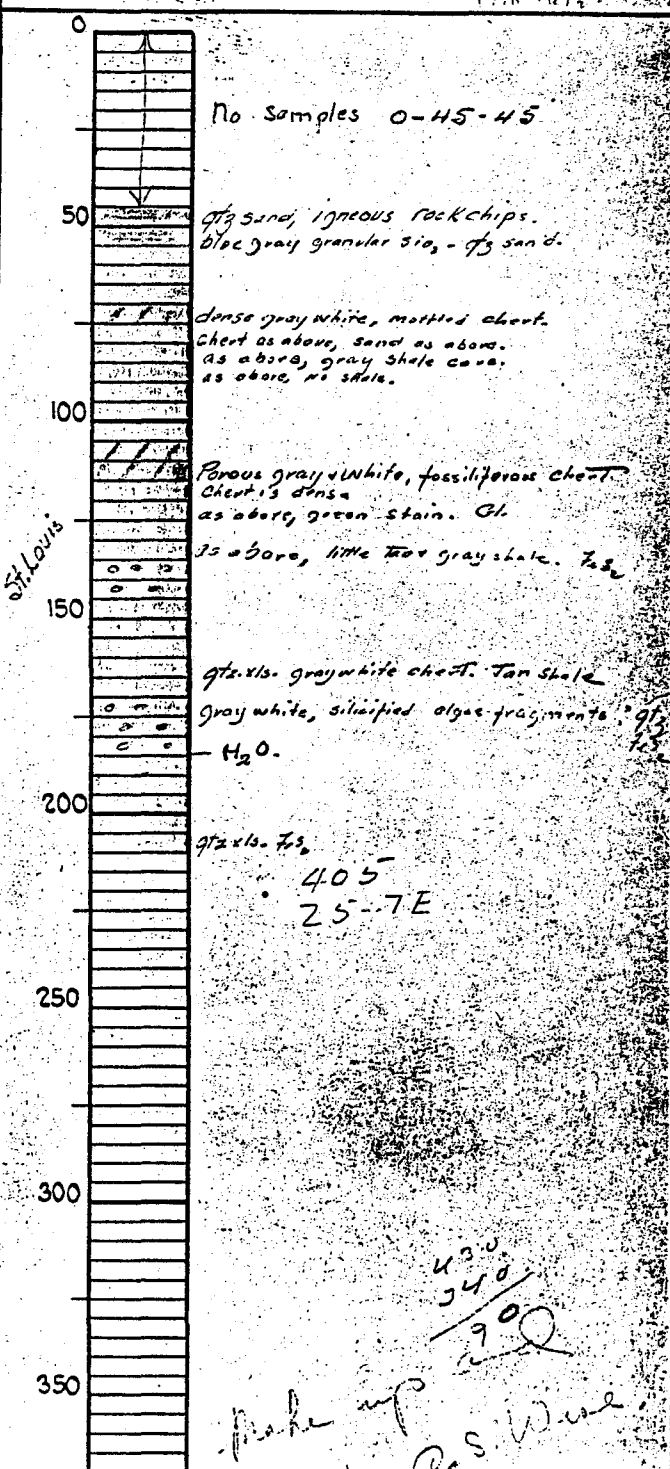
INDEX SHEET NO.



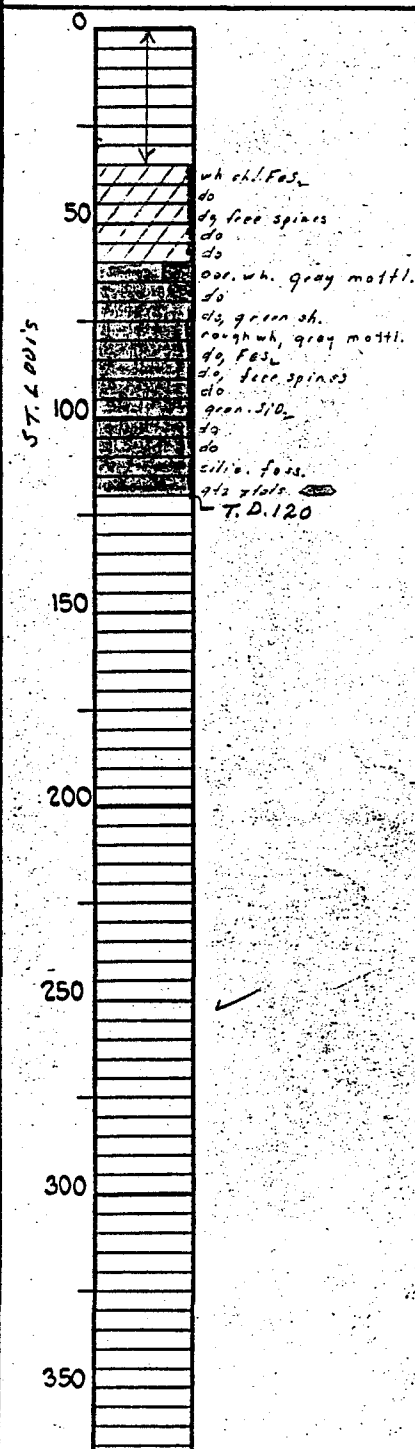
MISSOURI BUREAU OF GEOLOGY & MINES, ROLLA, MO.

MO SURVEY NO 2748	OWNER Fisher Chemical Co.	
COUNTY St. Louis	FARM 2nd & Malin Krodt	WELL NO. 1
T 45N	R 7E	DRILLER Chas. S. Wise
DATE Aug. 1933		ELEVATION 430 TM
PRODUCTION DD 150 30 G.P.M.		SAMPLES STUDIED Charles D. Gleason

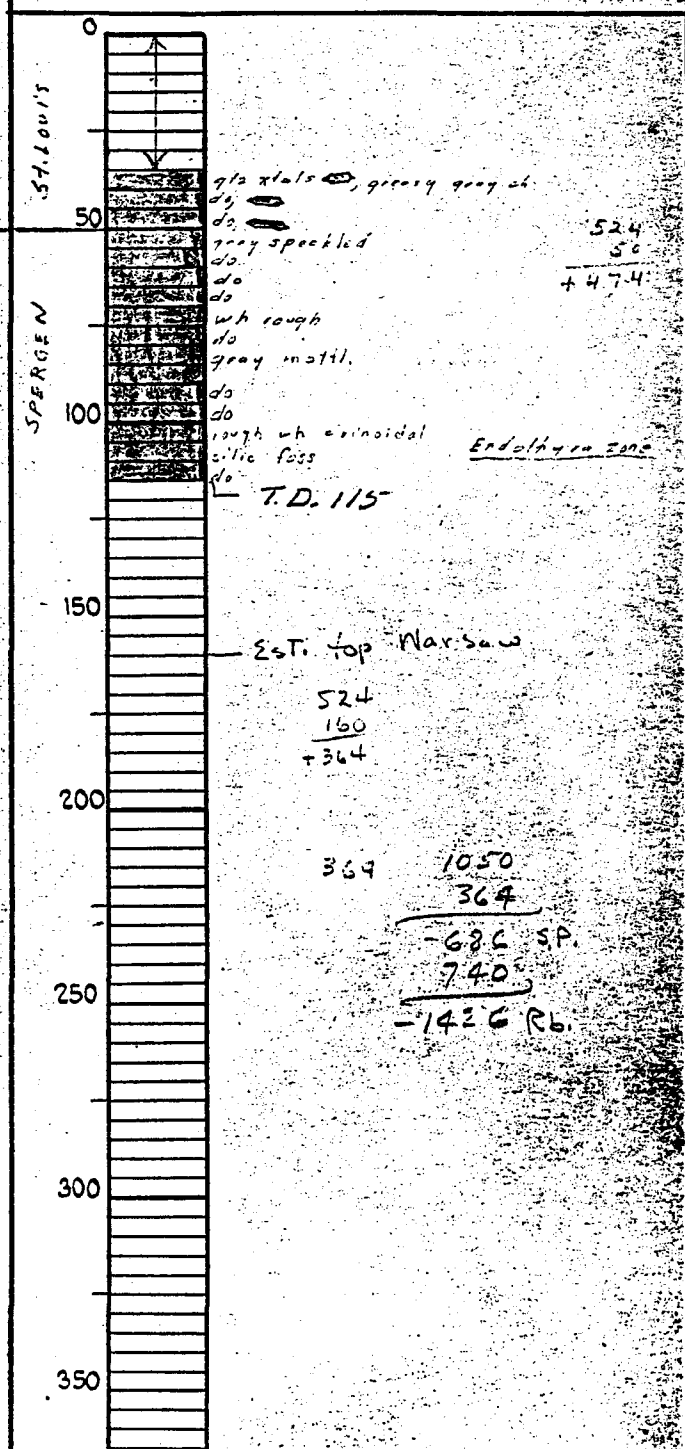
REMARKS  
S.W.L. 25'  
Draw down to 175 at 30 G.P.M.  
30 ft. of casing  
8 inch hole  
Water at 125' (No CaF<sub>2</sub>)



MISSOURI BUREAU OF GEOLOGY & MINES, ROLLA, MO.			
MO SURVEY NO <b>4059</b>		OWNER <b>City of St. Louis</b>	
COUNTY <b>St. Louis</b>		FARM <b>Arkansas &amp; Crittenden Sts</b>	WELL NO <b>2</b>
T <b>45</b>	R <b>7E</b>	DRILLER <b>Sewell Well Co</b>	
DATE <b>Jan 1937</b> <small>12-26-36 - 1-7-37</small>			
ELEVATION <b>542 (P.A.)</b>		PRODUCTION <b>Test hole sewer job #102</b>	
SAMPLES STUDIED <b>Grohskopf</b>			
REMARKS <b>34' of 15" Hole - 34' - 19"; 91' - 15" Vary little water at 61</b>			



MISSOURI BUREAU OF GEOLOGY & MINES, ROLLA, MO.			
MO SURVEY NO <b>4060</b>		OWNER <b>City of St. Louis</b>	
COUNTY <b>St. Louis</b>		FARM <b>Texas &amp; Poloma Sts</b>	WELL NO <b>1</b>
T <b>45</b>	R <b>7E</b>	DRILLER <b>Sewell Well Co</b>	
DATE <b>Jan 1937</b>			
ELEVATION <b>524 (P.A.)</b>		PRODUCTION <b>sewer job Test Hole</b>	
SAMPLES STUDIED <b>Grohskopf</b>			
REMARKS			



## MISSOURI BUREAU OF GEOLOGY &amp; MINES, ROLLA, MO.

MO SURVEY NO

OWNER

4116

City of St. Louis

COUNTY

FARM

WELL NO

St. Louis

Arkansas &amp; Potomac

#4

T 45 R 7E

DRILLER Sewell Well Co.

DATE 1/27/37 to 2/13/37

ELEVATION

PRODUCTION

552'

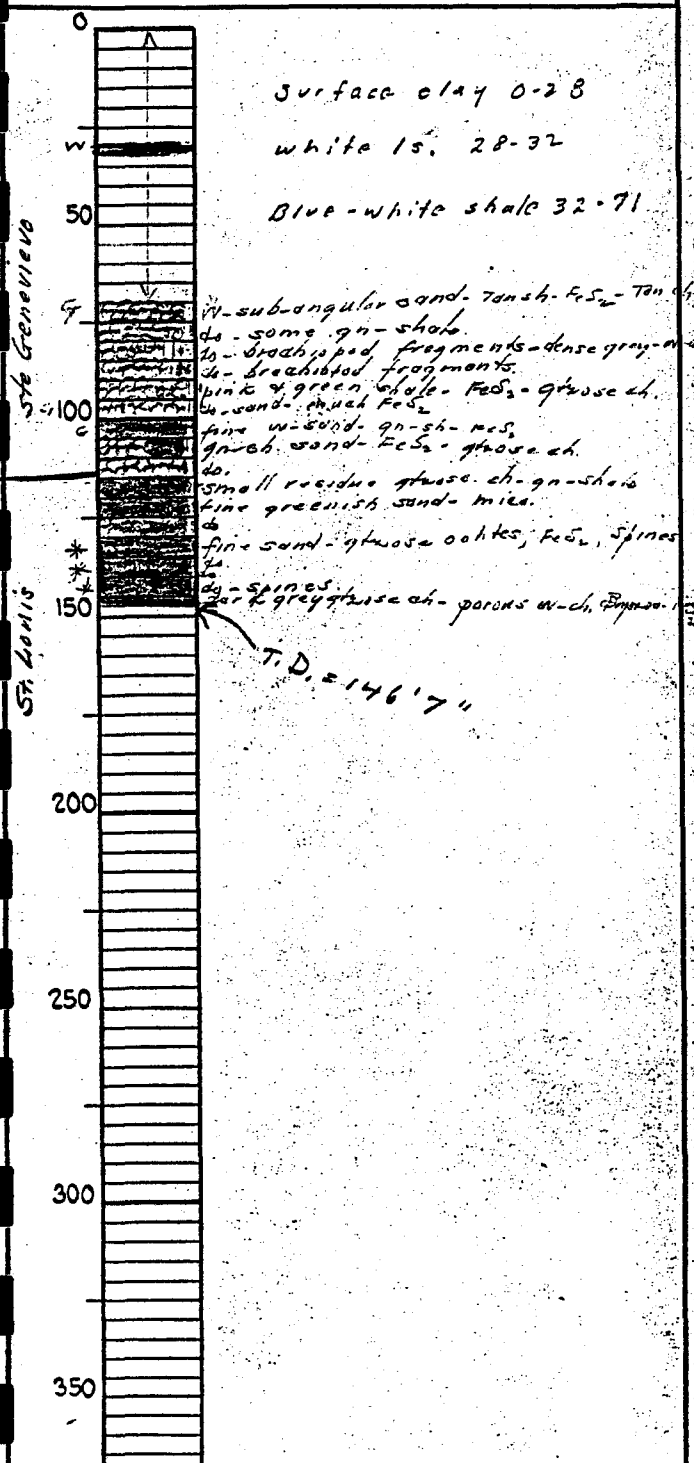
sewer  
test hole

SAMPLES STUDIED

3-4-37  
Hundhausen

REMARKS 71' x 20" O.D. casing

W. at 36'



## MISSOURI BUREAU OF GEOLOGY &amp; MINES, ROLLA, MO.

MO SURVEY NO

OWNER

4109

City of St. Louis

COUNTY

FARM

WELL NO

St. Louis

Cherokee &amp; Tennessee

#5

T 45N R 7E

DRILLER Sewell Well Co.

DATE 2/16/37 to 2/22/37

ELEVATION

PRODUCTION

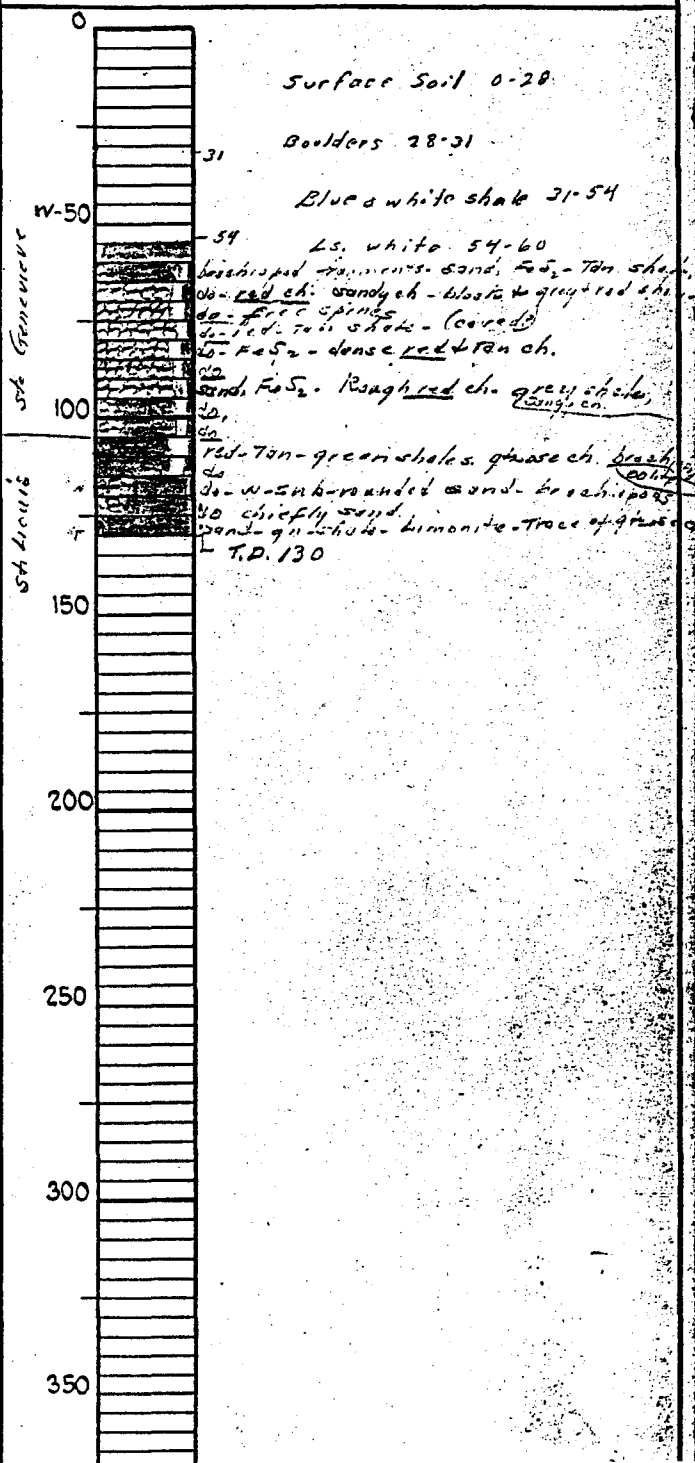
535'

Cement Hole

SAMPLES STUDIED

3-4-37  
HundhausenREMARKS 58' of 8" casing 8" hole  
Water stood to about 6" of top on outside  
of casing.

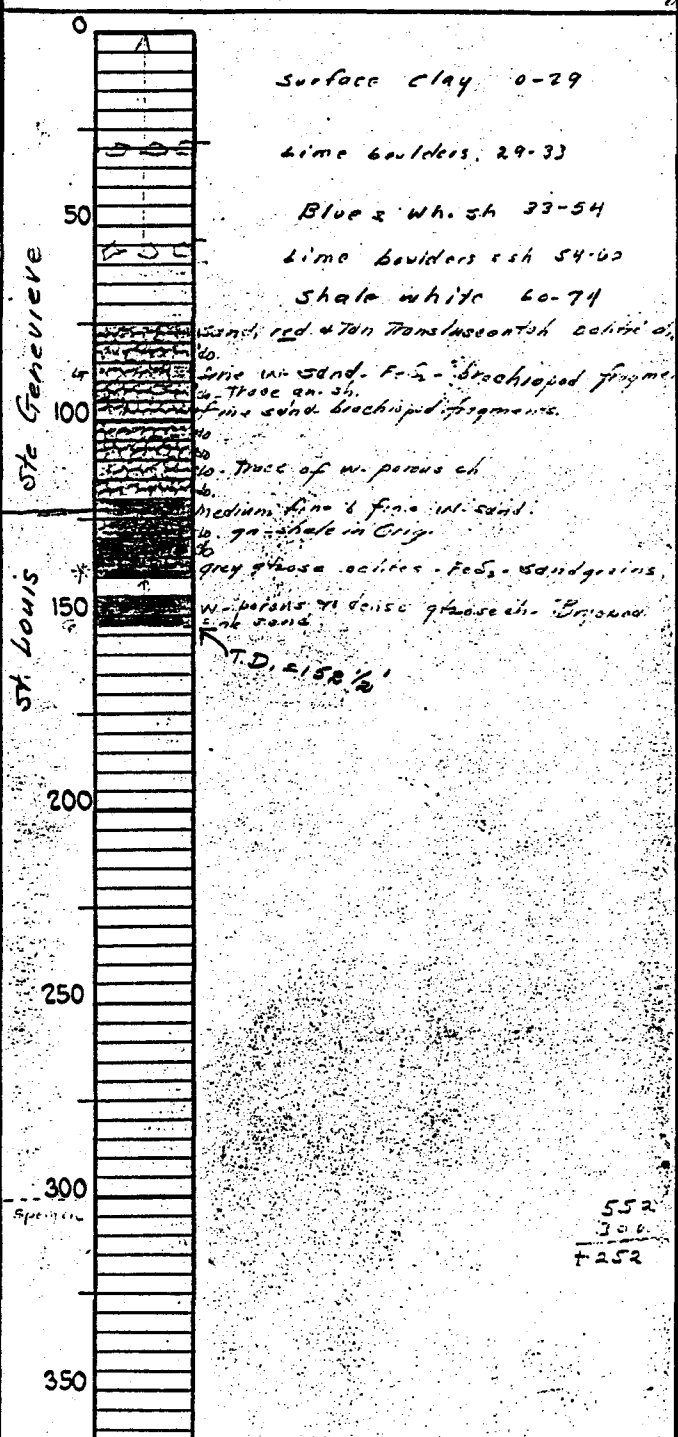
200 ft. South of Cherokee on Tennessee



MISSOURI BUREAU OF GEOLOGY & MINES, ROLLA, MO.

MO SURVEY NO <b>4114</b>		OWNER <b>City of St. Louis</b>	
COUNTY <b>St. Louis</b>	FARM <b>Grace &amp; Potomac</b>	WELL NO. <b>#3</b>	
T <b>45</b>	R <b>7E</b>	DRILLER <b>Sewell Well Co.</b>	
DATE <b>1/11/37 to 1/25/37</b>		ELEVATION <b>552</b>	
PRODUCTION <b>sewer test hole.</b>		SAMPLES STUDIED <b>3-5-37</b>	
REMARKS <b>74' of 15"</b>		INDEX SHEET NO. <b>101</b>	

REMARKS 74' of 15"

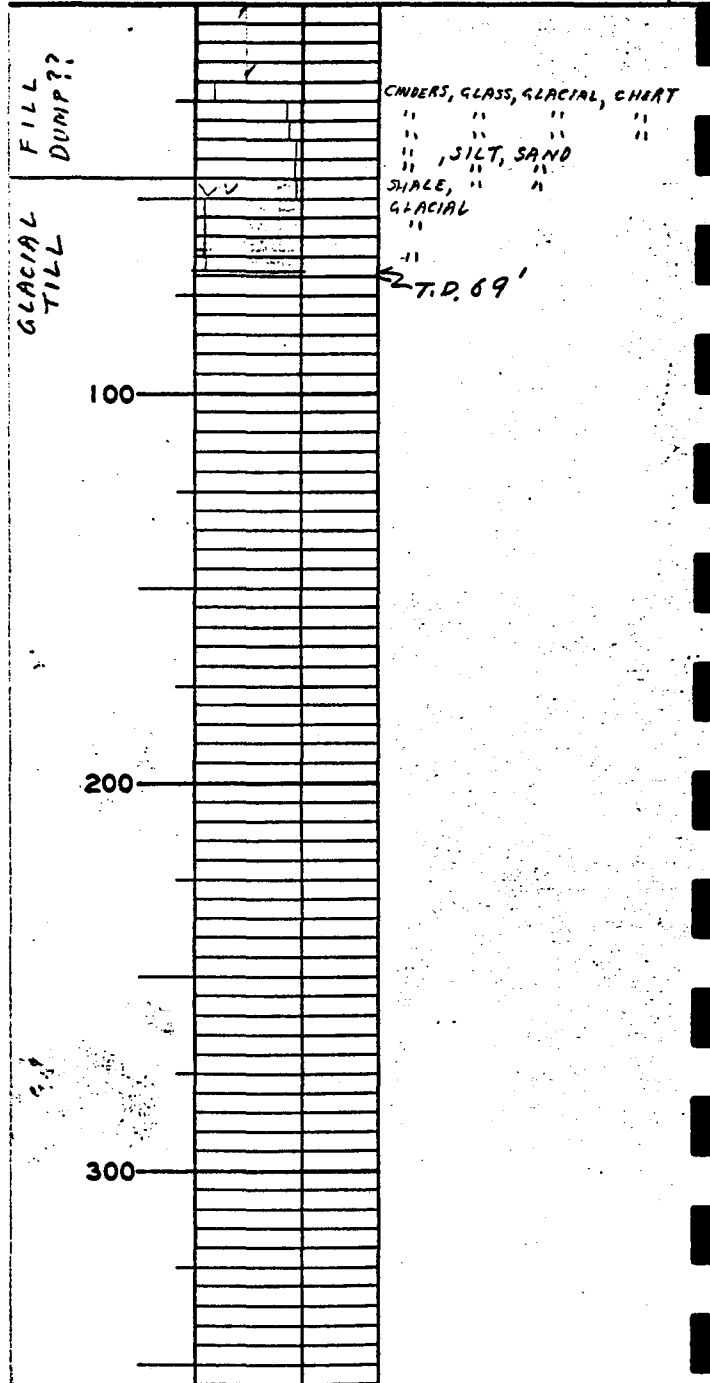


STATE OF MISSOURI  
DIVISION OF  
GEOLOGICAL SURVEY AND WATER RESOURCES

LOG NO. <b>18470</b>		OWNER <b>Industrial Sugar Corp.</b>	
COUNTY <b>St. Louis</b>	FARM	WELL NO.	
T <b>44N</b>	R <b>7E</b>	DRILLER <b>Haverstick Well &amp; Equip.</b>	
DATE <b>6-23-59</b>		ELEV. <b>419</b>	
PROD. <b>88 G.P.M.</b>		W <b>6' O.D.</b>	
LOGGED BY <b>H.M. GRAVES</b>		10/30/59	

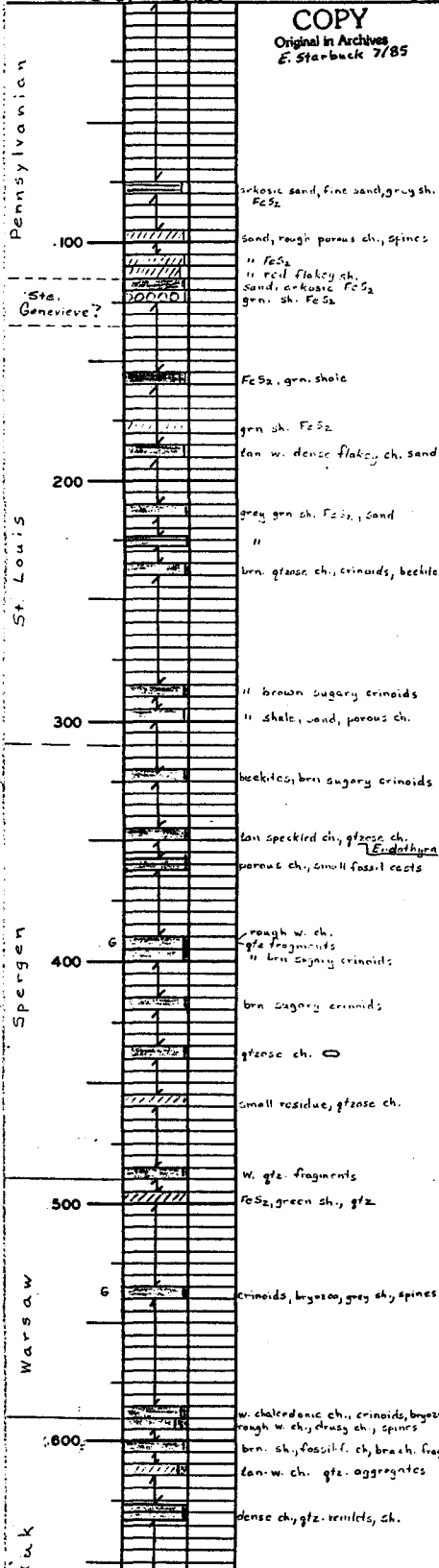
REMARKS 58' of 8" csg.  
8" hole @ bottom  
12' of Johnson. Stainless Steel Well Screen.

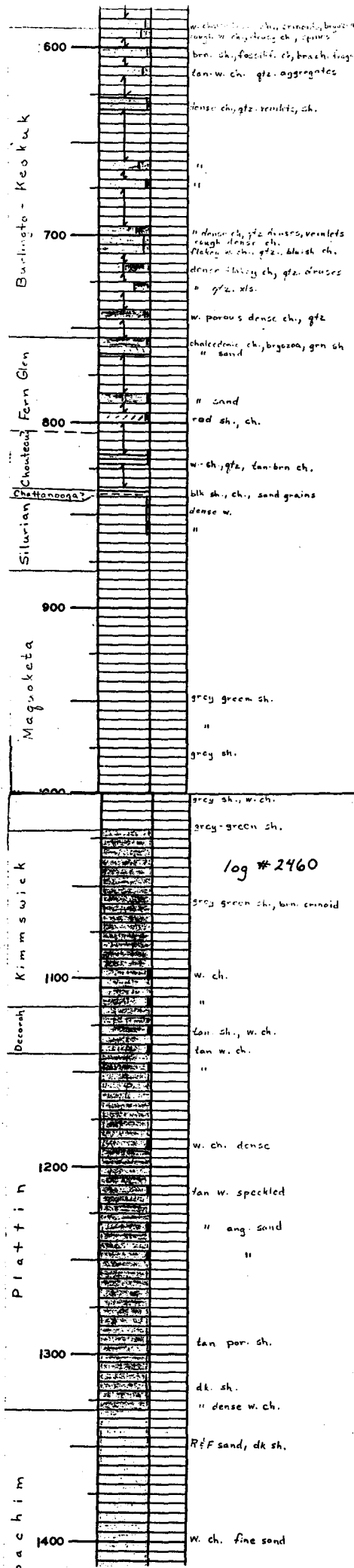
S.W.L. 43'

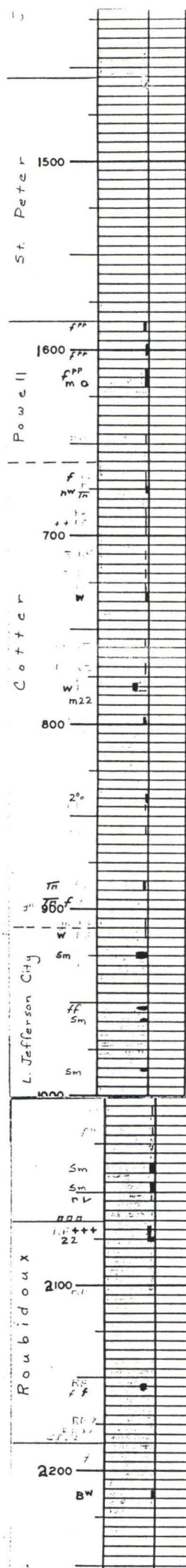


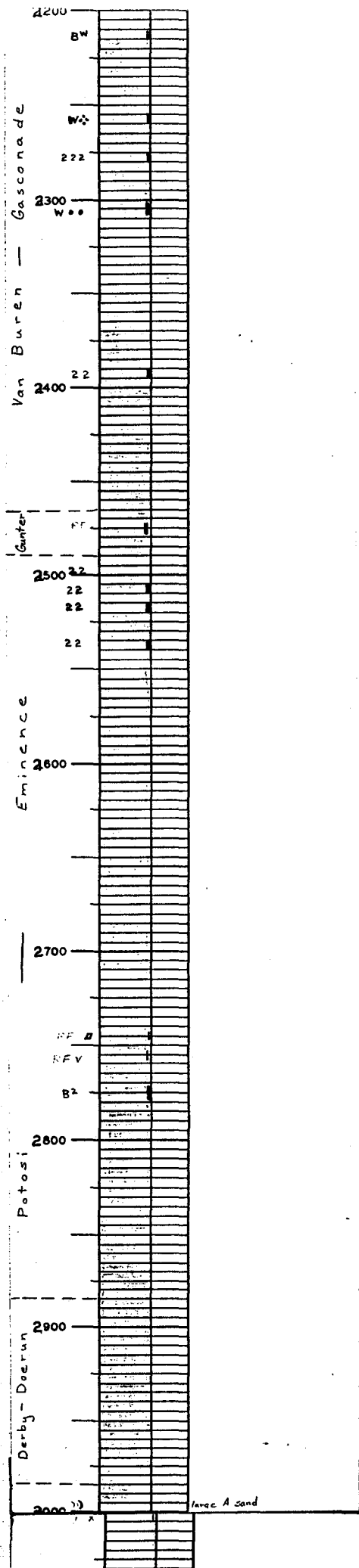


LOG NO. 2460	OWNER City Sanitarium	
COUNTY St. Louis	FARM 5800 Arsenal	WELL NO. 1
T 45N	R 7E	DRILLER
DATE Aug. 9, 1869		
ELEV. 570 (Hinshey)	PROD.	INDEX SHEET NO. 10
LOGGED BY Hundhausen Grahskopf McCracken		
REMARKS Under extension, E. wing main bldg. Kitchen now built over well. Info by J. P. Dames - 1940 Started Mar. 31, 1866 Comp. Aug. 9, 1869 (See other side)		

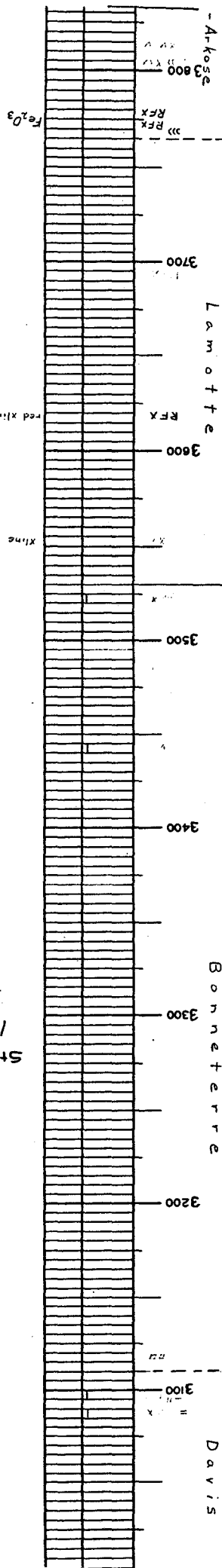








St. Louis Co.  
log # 2460



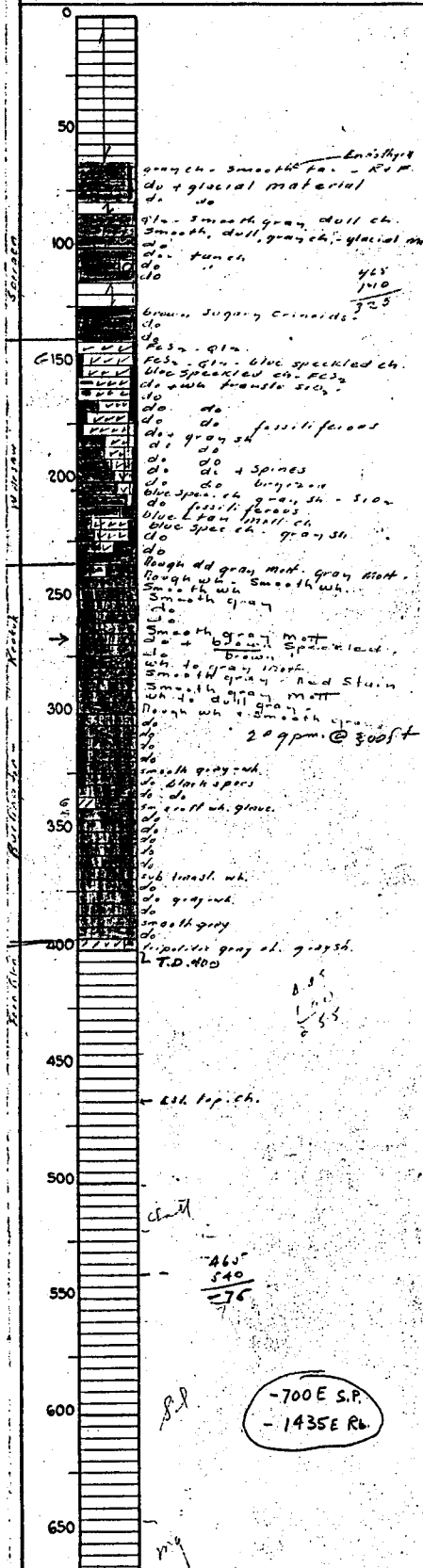
## MISSOURI BUREAU OF GEOLOGY &amp; MINES, ROLLA, MO.

NO SURVEY NO	OWNER
7923	Acetylene Gas Co.
COUNTY	FARM 913 S. Theresa J. WELL NO
St. Louis	2613. NE of Grand Chateau
T R	DRILLER M. Butler
45 7E	DATE June 1942
ELEVATION	PRODUCTION
460	pm
SAMPLES STUDIED	
Goff - Greshkopf 9-42 57	

## REMARKS

68 1/2 ft of 8" cas  
well draws down to bottom of pump  
cylinder, which is @ 300 ft.

SWL 63

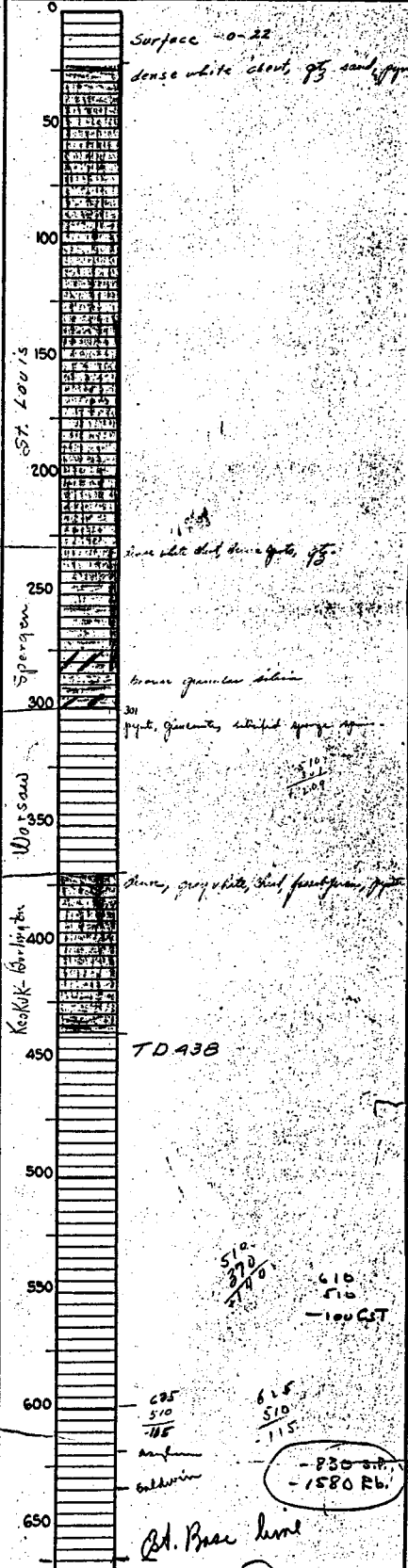


## MISSOURI BUREAU OF GEOLOGY &amp; MINES, ROLLA, MO.

NO SURVEY NO	OWNER
419	Vrooman Opt X
COUNTY	FARM
St. Louis	Taylor and M. Phares
T R	DRILLER H.W. Steinsiek
45 7E	DATE 1906
ELEVATION	PRODUCTION
510	
SAMPLES STUDIED	
Charles O. Gleason	

## REMARKS

log compiled from cuttings &  
drillers log-



NO SURVEY BY		OWNER
1986		GEO. BAUMHOFF
COUNTY	FARM ON E. Fork of Fee	
St. Louis	Black Creek (MAPLEWOOD)	
T	R	DRILLER E. E. Burt
45	6E	DATE Feb - Dec. 1938
ELEVATION		PRODUCTION
449 (P.A.)		
SAMPLES STUDIED		
Graham of McCracken		

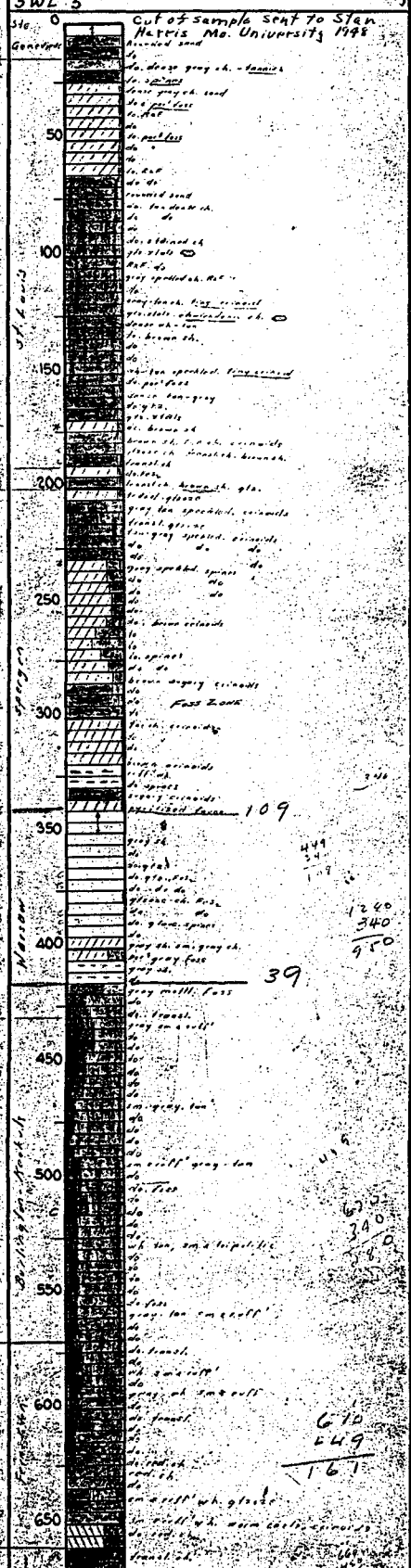
REMARKS 40' of 10"

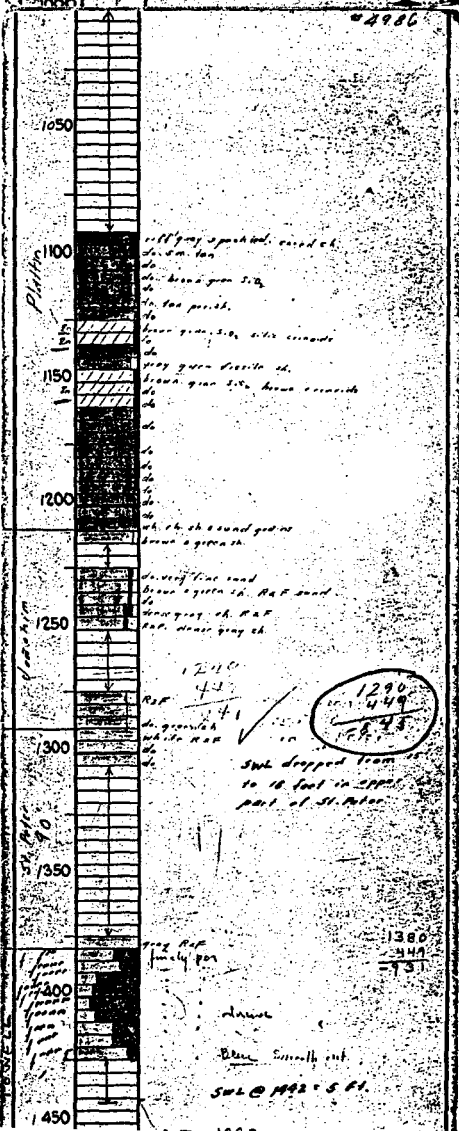
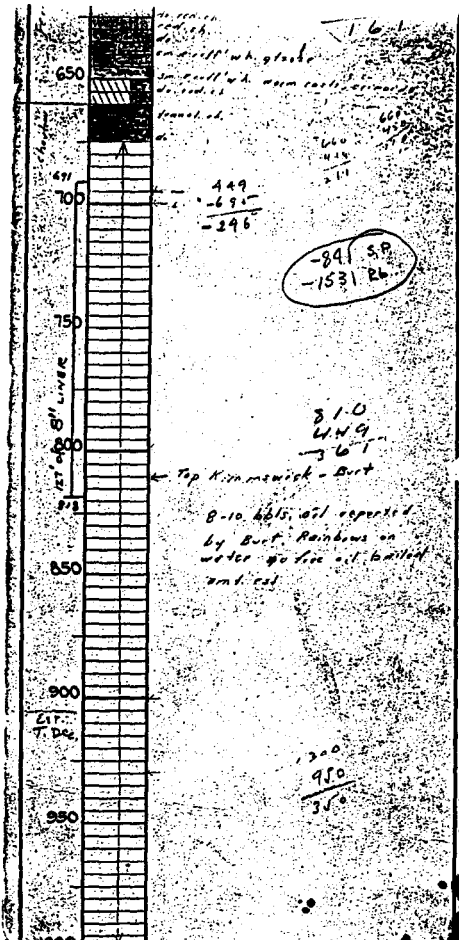
Crown @ 470 - 480 SWL dropped from 10' to 30'

SWL @ 645' 120'

127' of 8" liner - bottom liner 818'

SWL 5





**APPENDIX B**

**POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT FORM**

OMB Approval Number: 2050-0095  
Approved for Use Through: 1/92



Potential Hazardous  
Waste Site  
Preliminary Assessment Form

Identification

State: MO CERCLIS Number: MOT300010345  
CERCLIS Discovery Date:

1. General Site Information

Name: <u>SKF INDUSTRIES</u>		Street Address: <u>2320 MARCONI AVENUE</u>			
City: <u>ST. LOUIS</u>	State: <u>MO</u>	Zip Code: <u>63110</u>	County: <u>ST. LOUIS</u>	Co. Code:	Cong. Dist:
Latitude: <u>38° 36' 50.00"</u>	Longitude: <u>90° 16' 21.00"</u>	Approximate Area of Site: <u>9.8</u> Acres <u>1,080,000</u> Square Ft		Status of Site: <input checked="" type="checkbox"/> Inactive <input type="checkbox"/> Active <input type="checkbox"/> Not Specified <input type="checkbox"/> NA (GW phase, etc.)	

2. Owner/Operator Information

Owner: <u>AMERICAN BANK OF ST. LOUIS &amp;</u>			Operator: <u>MULTIPLE</u>		
Street Address: <u>BOATMEN'S BANK OF MISSOURI</u>			Street Address:		
City:			City:		
State:	Zip Code:	Telephone: ( )	State:	Zip Code:	Telephone: ( )
Type of Ownership: <input checked="" type="checkbox"/> Private <input type="checkbox"/> Federal Agency Name: _____ <input type="checkbox"/> State <input type="checkbox"/> Indian <input type="checkbox"/> County <input type="checkbox"/> Municipal <input type="checkbox"/> Not Specified <input type="checkbox"/> Other: _____			How Initially Identified: <input type="checkbox"/> Citizen Complaint <input type="checkbox"/> PA Petition <input type="checkbox"/> State/Local Program <input type="checkbox"/> RCRA/CERCLA Notification <input checked="" type="checkbox"/> Federal Program <input type="checkbox"/> Incidental <input type="checkbox"/> Not Specified <input type="checkbox"/> Other: _____		

3. Site Evaluator Information

Name of Evaluator: <u>TERMAON ENVIRONMENTAL</u>	Agency/Organization: <u>EPA-CONTRACTOR</u>	Date Prepared: <u>3-25-92</u>
Street Address: <u>7810 N.W. 100TH ST.</u>		City: <u>KANSAS CITY</u> State: <u>MO</u>
Name of EPA or State Agency Contact: <u>DIANE HUFFMAN</u>		Street Address: <u>726 MINNESOTA</u>
City: <u>KANSAS CITY</u>	State: <u>KS</u>	Telephone: <u>(913) 551-7544</u>

4. Site Disposition (for EPA use only)

Emergency Response/Removal Assessment Recommendation: <input type="checkbox"/> Yes <input type="checkbox"/> No Date: _____	CERCLIS Recommendation: <input type="checkbox"/> Higher Priority SI <input type="checkbox"/> Lower Priority SI <input type="checkbox"/> NFRAP <input type="checkbox"/> RCRA <input type="checkbox"/> Other: _____ Date: _____	Signature:  Name (typed):  Position:
--	---	--



Potential Hazardous Waste Site  
Preliminary Assessment Form - Page 2 of 4

CERCLIS Number:

### 5. General Site Characteristics

Predominant Land Uses Within 1 Mile of Site (check all that apply):

- ☒ Industrial ☐ Agriculture ☐ DOI  
☒ Commercial ☐ Mining ☐ Other Federal Facility  
☒ Residential ☐ DOD  
☐ Forest/Fields ☐ DOE ☐ Other \_\_\_\_\_

Site Setting:

- ☒ Urban  
☐ Suburban  
☐ Rural

Years of Operation:

Beginning Year 1918

Ending Year 1984

☐ Unknown

Type of Site Operations (check all that apply):

☒ Manufacturing (must check subcategory)

- ☒ Lumber and Wood Products  
☐ Inorganic Chemicals  
☐ Plastic and/or Rubber Products  
☐ Paints, Varnishes  
☐ Industrial Organic Chemicals  
☐ Agricultural Chemicals  
(e.g., pesticides, fertilizers)  
☐ Miscellaneous Chemical Products  
(e.g., adhesives, explosives, ink)  
☐ Primary Metals  
☒ Metal Coating, Plating, Engraving  
☒ Metal Forging, Stamping  
☒ Fabricated Structural Metal Products  
☐ Electronic Equipment  
☐ Other Manufacturing

☐ Mining

- ☐ Metals  
☐ Coal  
☐ Oil and Gas  
☐ Non-metallic Minerals

- ☐ Retail  
☐ Recycling  
☐ Junk/Salvage Yard  
☐ Municipal Landfill  
☐ Other Landfill  
☐ DOD  
☐ DOE  
☐ DOI

☐ Other Federal Facility \_\_\_\_\_  
☐ RCRA

☒ Treatment, Storage, or Disposal

- ☒ Large Quantity Generator  
☐ Small Quantity Generator  
☐ Subtitle D  
☐ Municipal  
☐ Industrial  
☐ "Converter"  
☒ "Protective Filer"  
☐ "Non- or Late Filer"

☐ Not Specified

☐ Other \_\_\_\_\_

Waste Generated:

- ☒ Onsite  
☐ Offsite  
☐ Onsite and Offsite

Waste Deposition Authorized By:

- ☐ Present Owner  
☐ Former Owner  
☐ Present & Former Owner  
☐ Unauthorized  
☐ Unknown

Waste Accessible to the Public:

- ☐ Yes  
☐ No

Distance to Nearest Dwelling,  
School, or Workplace:

ON-SITE Feet

### 6. Waste Characteristics Information

Source Type:  
(check all that apply)

- ☐ Landfill  
☐ Surface Impoundment  
☒ Drums  
☒ Tanks and Non-Drum Containers  
☐ Chemical Waste Pile  
☒ Scrap Metal or Junk Pile  
☐ Tailings Pile  
☐ Trash Pile (open dump)  
☐ Land Treatment  
☐ Contaminated Ground Water Plume  
(unidentified source)  
☐ Contaminated Surface Water/Sediment  
(unidentified source)  
☒ Contaminated Soil  
☐ Other \_\_\_\_\_  
☐ No Sources

Source Waste Quantity:  
(include units)

\_\_\_\_\_  
3,000 Gallons  
1,500 Gallons  
15 yds  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
UNKNOWN  
\_\_\_\_\_

Tier<sup>\*</sup>:

\_\_\_\_\_  
✓  
✓  
✓  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

General Types of Waste (check all that apply)

- ☒ Metals ☐ Pesticides/Herbicides  
☒ Organics ☒ Acids/Bases  
☒ Inorganics ☒ Oily Waste  
☒ Solvents ☐ Municipal Waste  
☐ Paints/Pigments ☐ Mining Waste  
☐ Laboratory/Hospital Waste ☐ Explosives  
☐ Radioactive Waste ☐ Other \_\_\_\_\_  
☐ Construction/Demolition Waste

Physical State of Waste as Deposited (check all that apply):

- ☒ Solid ☒ Sludge ☐ Powder  
☒ Liquid ☐ Gas

\* C = Constituent, W = Wastestream, V = Volume, A = Area



Potential Hazardous Waste Site  
Preliminary Assessment Form - Page 3 of 4

CERCLIS Number:

### 7. Ground Water Pathway

Is Ground Water Used for Drinking Water Within 4 Miles:

☐ Yes  
☒ No

Type of Drinking Water Wells Within 4 Miles (check all that apply):

☐ Municipal  
☐ Private  
☒ None

Is There a Suspected Release to Ground Water:

☐ Yes  
☒ No

Have Primary Target Drinking Water Wells Been Identified:

☐ Yes  
☒ No

If Yes, Enter Primary Target Population:

\_\_\_\_\_ People

List Secondary Target Population Served by Ground Water Withdrawn From:

0 - ¼ Mile

0

> ¼ - ½ Mile

0

> ½ - 1 Mile

0

> 1 - 2 Miles

0

> 2 - 3 Miles

0

> 3 - 4 Miles

0

Total Within 4 Miles

0

Depth to Shallowest Aquifer:

\_\_\_\_\_ Feet

Karst Terrain/Aquifer Present:

☐ Yes  
☒ No

Nearest Designated Wellhead Protection Area:

☐ Underlies Site  
☐ > 0 - 4 Miles  
☒ None Within 4 Miles

### 8. Surface Water Pathway

Type of Surface Water Draining Site and 15 Miles Downstream (check all that apply):

☐ Stream ☒ River ☐ Pond ☐ Lake  
☐ Bay ☐ Ocean ☐ Other \_\_\_\_\_

Shortest Overland Distance From Any Source to Surface Water:

2,500 Feet

0.5 Miles

Is There a Suspected Release to Surface Water:

☐ Yes  
☒ No

Site is Located in:

☐ Annual - 10 yr Floodplain  
☐ > 10 yr - 100 yr Floodplain  
☒ > 100 yr - 500 yr Floodplain  
☐ > 500 yr Floodplain

Drinking Water Intakes Located Along the Surface Water Migration Path:

☐ Yes  
☒ No

Have Primary Target Drinking Water Intakes Been Identified:

☐ Yes  
☒ No

If Yes, Enter Population Served by Primary Target Intakes:

\_\_\_\_\_ People

List All Secondary Target Drinking Water Intakes:

Name Water Body Flow (cfs) Population Served

Not Applicable

Total within 15 Miles

0

Fisheries Located Along the Surface Water Migration Path:

☒ Yes  
☐ No

Have Primary Target Fisheries Been Identified:

☐ Yes  
☐ No

List All Secondary Target Fisheries:

Water Body/Fishery Name Flow (cfs)

Mississippi River



Potential Hazardous Waste Site  
Preliminary Assessment Form - Page 4 of 4

CERCLIS Number:

### 8. Surface Water Pathway (continued)

Wetlands Located Along the Surface Water Migration Path:

☐ Yes  
☒ No

Have Primary Target Wetlands Been Identified:

☐ Yes  
☒ No

List Secondary Target Wetlands:

Water Body	Flow (cfs)	Frontage Miles
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Other Sensitive Environments Located Along the Surface Water Migration Path:

☐ Yes  
☒ No

Have Primary Target Sensitive Environments Been Identified:

☐ Yes  
☒ No

List Secondary Target Sensitive Environments:

Water Body	Flow (cfs)	Sensitive Environment Type
<u>NOT APPLICABLE</u>		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

### 9. Soil Exposure Pathway

Are People Occupying Residences or  
Attending School or Daycare on or Within 200  
Feet of Areas of Known or Suspected  
Contamination:

☒ Yes  
☐ No

If Yes, Enter Total Resident Population:

50 People

Number of Workers Onsite:

☐ None  
☒ 1 - 100  
☐ 101 - 1,000  
☐ > 1,000

Have Terrestrial Sensitive Environments Been Identified on  
or Within 200 Feet of Areas of Known or Suspected  
Contamination:

☐ Yes  
☒ No

If Yes, List Each Terrestrial Sensitive Environment:

### 10. Air Pathway

Is There a Suspected Release to Air:

☐ Yes  
☒ No

Enter Total Population on or Within:

Onsite NA

0 - ¼ Mile \_\_\_\_\_

> ¼ - ½ Mile \_\_\_\_\_

> ½ - 1 Mile \_\_\_\_\_

> 1 - 2 Miles \_\_\_\_\_

> 2 - 3 Miles \_\_\_\_\_

> 3 - 4 Miles \_\_\_\_\_

Total Within 4 Miles \_\_\_\_\_

Wetlands Located Within 4 Miles of the Site:

☐ Yes  
☒ No

Other Sensitive Environments Located Within 4 Miles of the Site:

☐ Yes  
☒ No

List All Sensitive Environments Within ½ Mile of the Site:

Distance	Sensitive Environment Type/Wetlands Area (acres)
Onsite	<u>NA</u>
0 - ¼ Mile	_____
> ¼ - ½ Mile	_____

**APPENDIX C**

**PHOTODOCUMENTATION**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 1

Photographer: SMR

Date: 2-24-92

Direction: SW  
(facing)

Description: Aerial view of site and  
surrounding properties



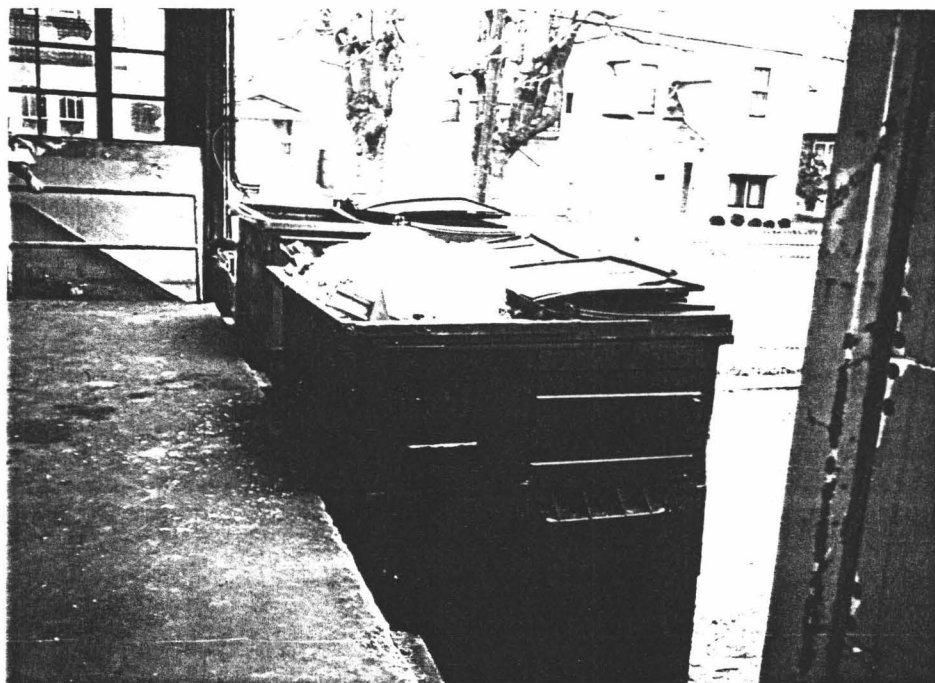
Photo # 2

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Two dumpsters on north  
side of building No. 2A



**Terracon**

# PHOTO LOG

Project No. 10-D247-20

Photo # 3

Photographer: SMR

Date: 2-24-92

Direction: NW

(facing)

Description: Pile of pallets leaning  
against east wall of building No. 2A.  
Storm sewer  
drain is located by pickup.



Photo # 4

Photographer: SMR

Date: 2-24-92

Direction: SW

(facing)

Description: Southern portion of  
building No. 2A.



Terracon

**PHOTO LOG**

Project No. 10-D247-20

Photo # 5

Photographer: SMR

Date: 2-24-92

Direction: S-SE (facing)

Description: West side of building No. 25 and north face of building No. 3A on the right.



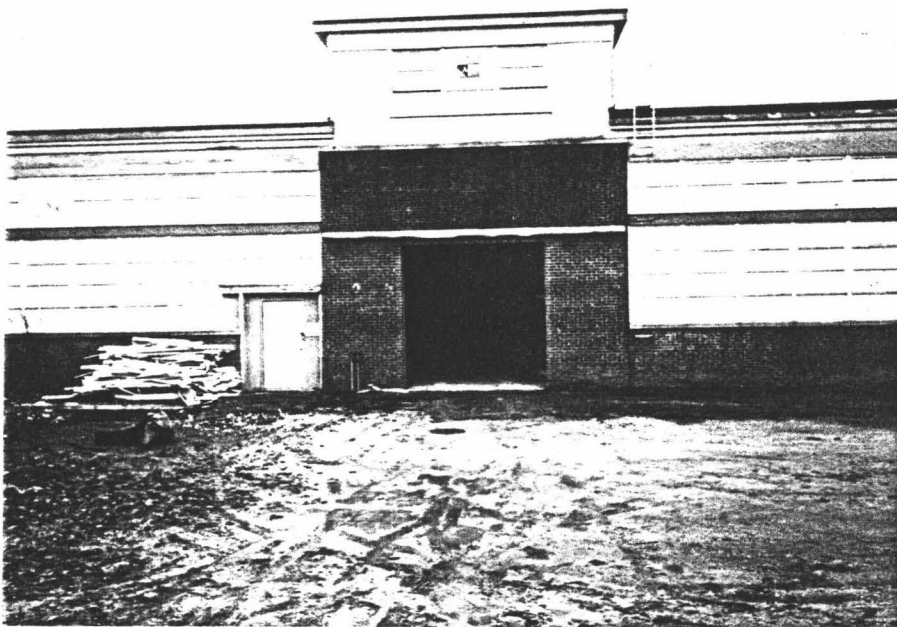
Photo # 6

Photographer: SMR

Date: 2-24-92

Direction: S  
(facing)

Description: North side of building No. 25. A pile of boards and plastic is to the left of the doors



**Terracon**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 7

Photographer: SMR

Date: 2-24-92

Direction: S  
(facing)

Description: Concrete floor in Building  
No. 25. Outline  
of unknown rectangular  
patches are shown.



Photo # 8

Photographer: SMR

Date: 2-24-92

Direction: S  
(facing)

Description: Inside of  
building No. 3. Boxes  
contain file folders and  
other paper products.



**Terracon**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 9

Photographer: SMR

Date: 2-24-92

Direction: NW  
(facing)

Description: Transformers in east room  
in Building No. 4.  
Switching box is seen to the left of the  
transformers.

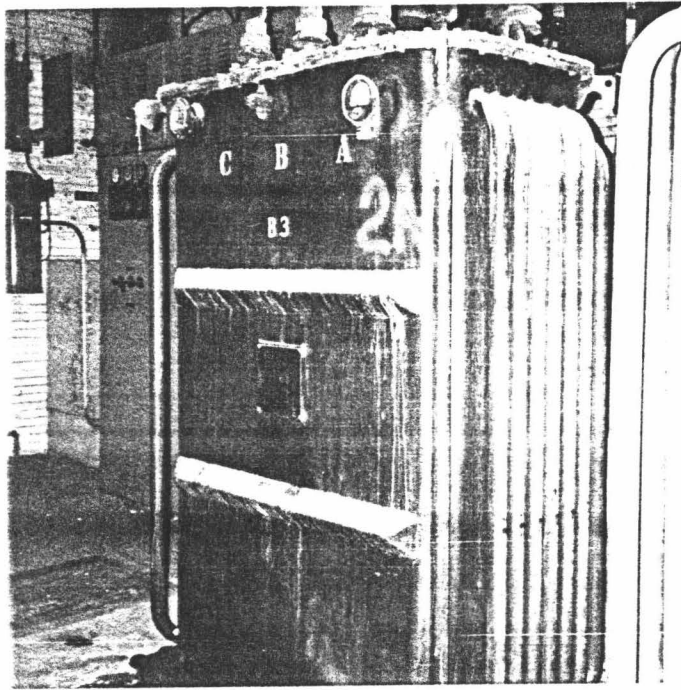


Photo # 10

Photographer: SMR

Date: 2-24-92

Direction: NE  
(facing)

Description: Oily stains at base of  
transformer in east room of building  
No. 4.



**PHOTO LOG**

Project No. 10-D247-20

Photo # 11

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: 55-gallon drum with "PPE"  
painted on side.



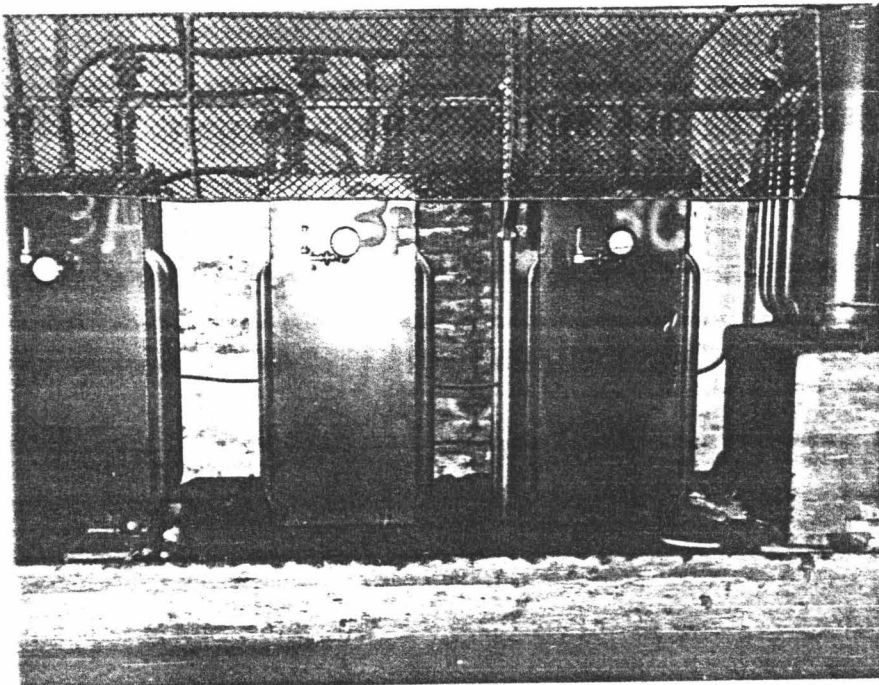
Photo # 12

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Transformers on west side  
of building No. 4



**Terracon**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 13

Photographer: SMR

Date: 2-24-92

Direction: E  
(facing)

Description: Oily staining at base of  
transformers in alleyway between  
building Nos. 3 and 4.



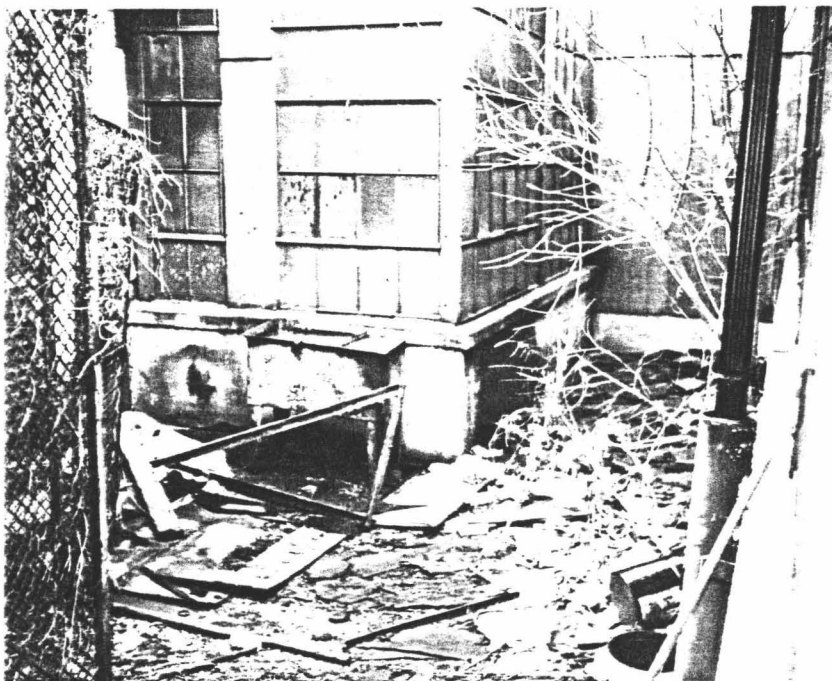
Photo # 14

Photographer: SMR

Date: 2-24-92

Direction: S-SE  
(facing)

Description: Trash and debris in  
alleyway between building Nos. 3 and 4.



# PHOTO LOG

Project No. 10-D247-20

Photo # 15

Photographer: SMR

Date: 2-24-92

Direction: N  
(facing)

Description: Paved area  
between building Nos. 3A and 25.  
Concrete truck loading ramp is to the  
left.



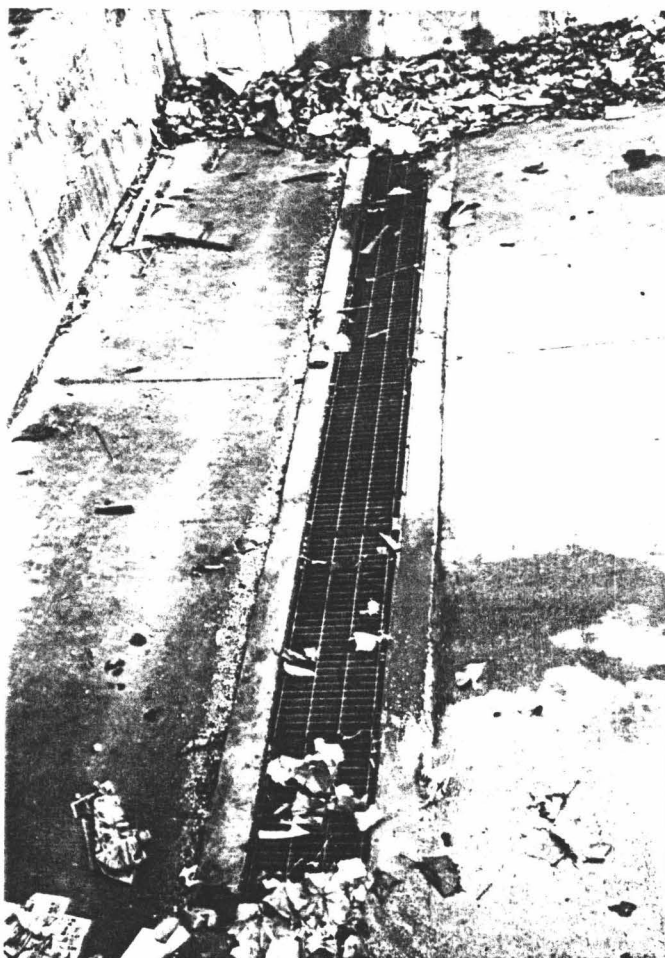
Photo # 16

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Storm sewer grate at base  
of truck loading ramp.



# PHOTO LOG

Project No. 10-D247-20

Photo # 17

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Former storage area.  
North side of building No. 3A is on the  
right. Camera  
is facing building No. 2A.

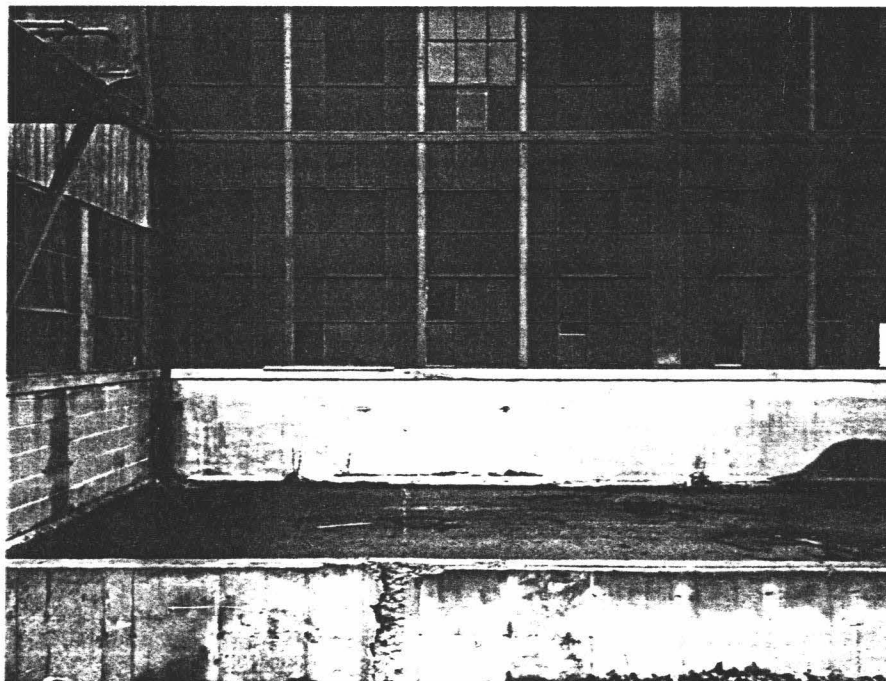


Photo # 18

Photographer: SMR

Date: 2-24-92

Direction: E  
(facing)

Description: Area formerly  
encompassing building No. 30.



**PHOTO LOG**

Project No. 10-D247-20

Photo # 19

Photographer: SMR

Date: 2-24-92

Direction: E

(facing)

Description: Bischoff Avenue with townhomes on the south side. Intersection of Marconi Avenue and Bischoff Avenue is in foreground.

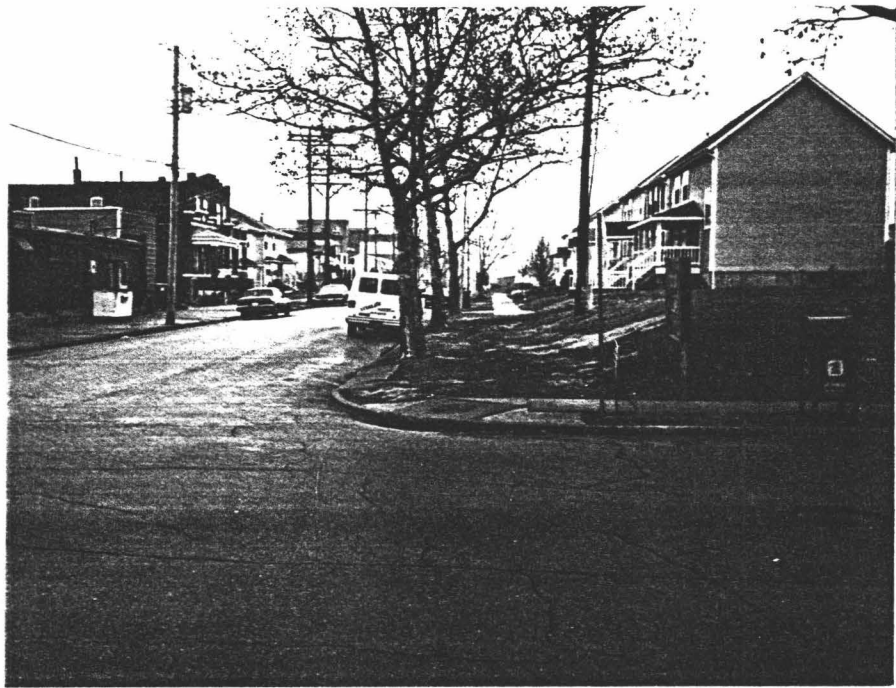


Photo # 20

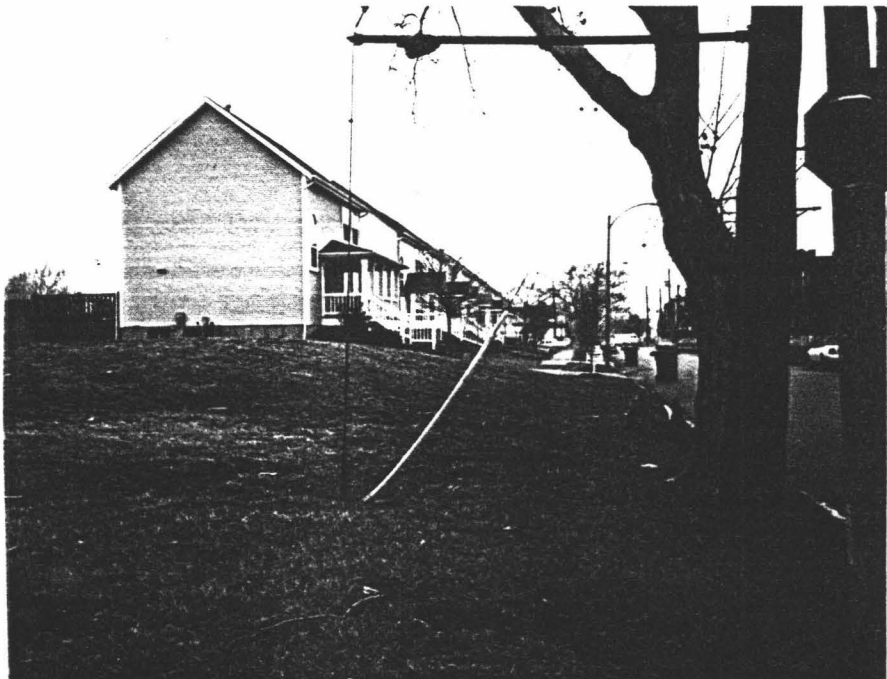
Photographer: SMR

Date: 2-24-92

Direction: W

(facing)

Description: Bischoff Avenue is on the right and townhomes are on the left.



**Terracon**

# PHOTO LOG

Project No. 10-D247-20

Photo # 21

Photographer: SMR

Date: 2-24-92

Direction: S-SW

(facing)

Description: East side of building Nos. 25 and 4 which is in center of picture.

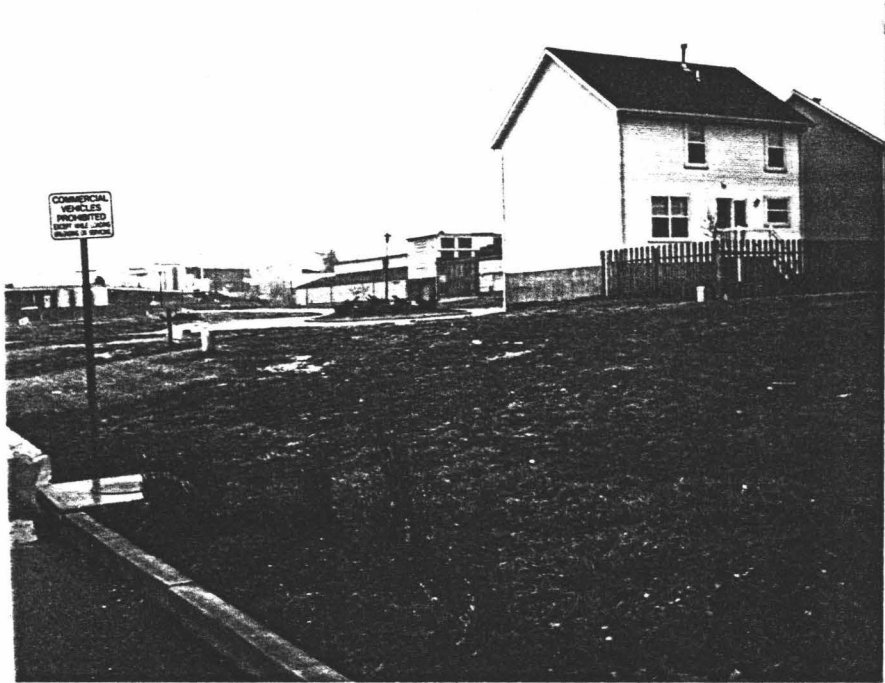


Photo # 22

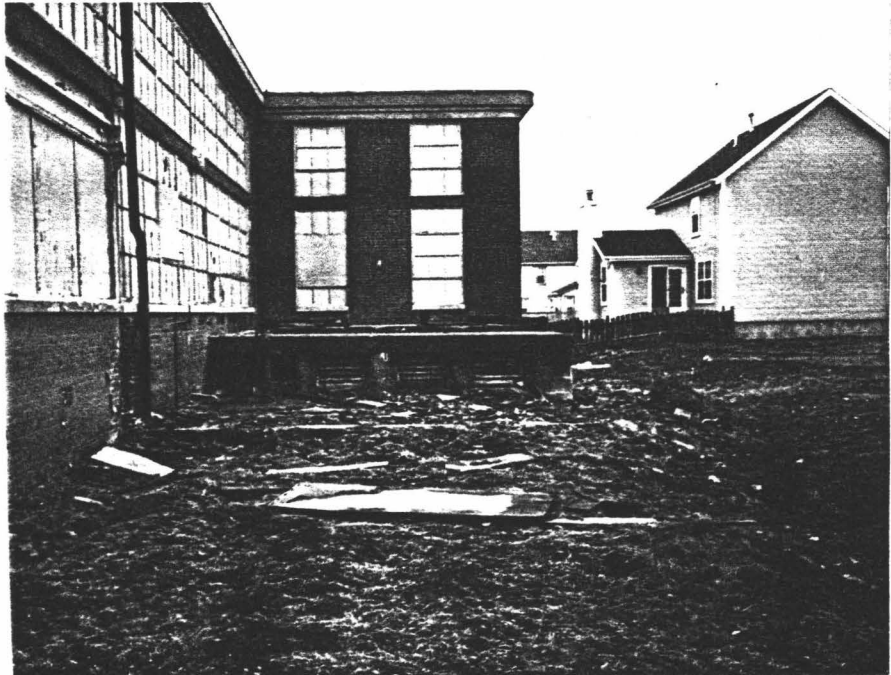
Photographer: SMR

Date: 2-24-92

Direction: N

(facing)

Description: Building No. 25 is on the left. Various trash and debris exists on the ground.



Terracon

# PHOTO LOG

Project No. 10-D247-20

Photo # 23

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Small pile of concrete rubble. East side of building No. 25 is in background.

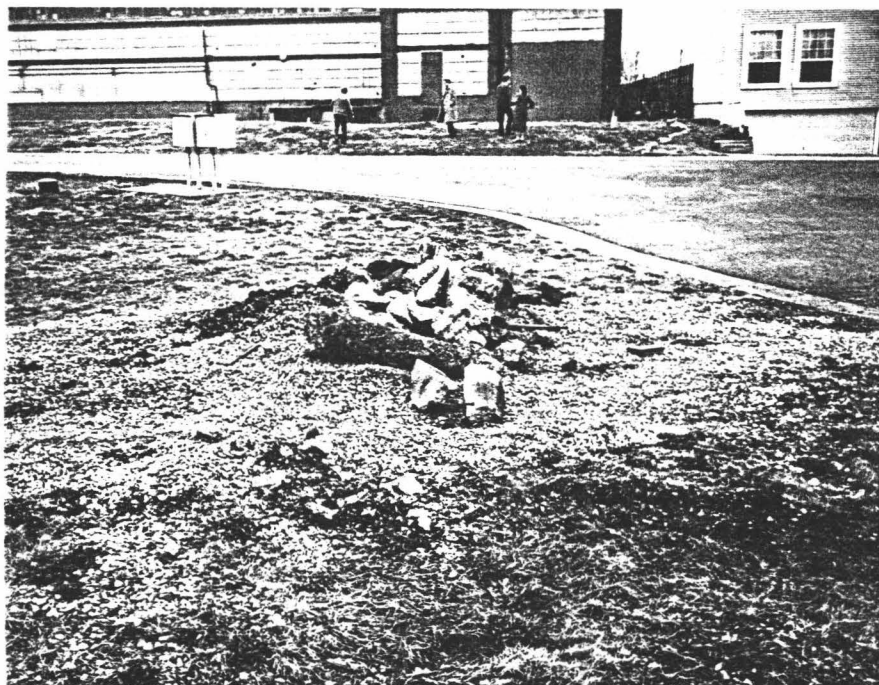


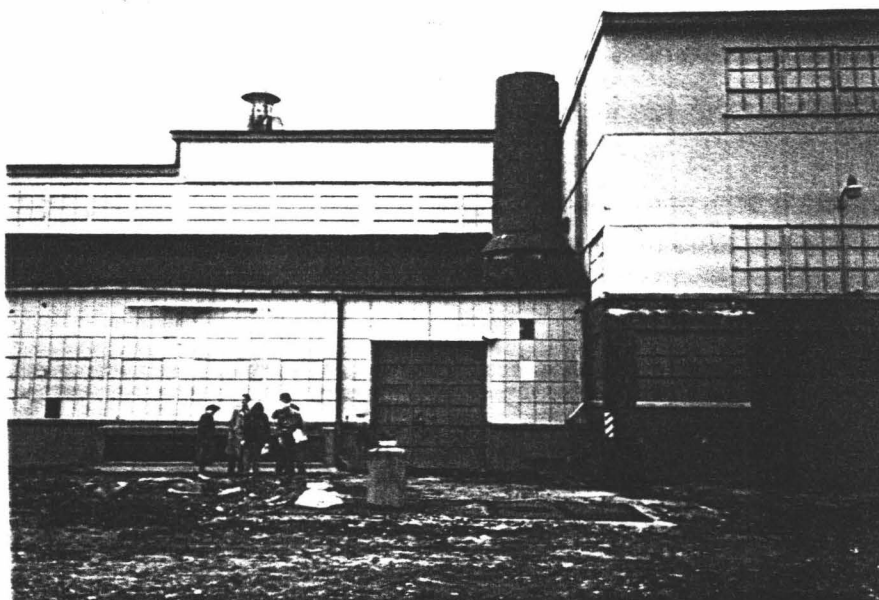
Photo # 24

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: East side of building No. 4. Brick boiler stack is seen on the roof.



Terracon

# PHOTO LOG

Project No. 10-D247-20

Photo # 25

Photographer: SMR

Date: 2-24-92

Direction: S-SW

(facing)

Description: Building No. 4 is on right.  
Wolman Wood Products is in  
background to the left.



Photo # 26

Photographer: SMR

Date: 2-24-92

Direction: E

(facing)

Description: Building No. 27. Open  
top 55-gallon drum is in center of  
picture.



**PHOTO LOG**

Project No. 10-D247-20

Photo # 27

Photographer: SMR

Date: 2-24-92

Direction: S

(facing)

Description: South side  
of building No. 1



Photo # 28

Photographer: SMR

Date: 2-24-92

Direction: SW

(facing)

Description: Staining at base of furnace  
in lower level of building No. 1.



**Terracon**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 29

Photographer: SMR

Date: 2-24-92

Direction: W  
(facing)

Description: Partially full 35-gallon  
drum labeled hydrochloric acid.

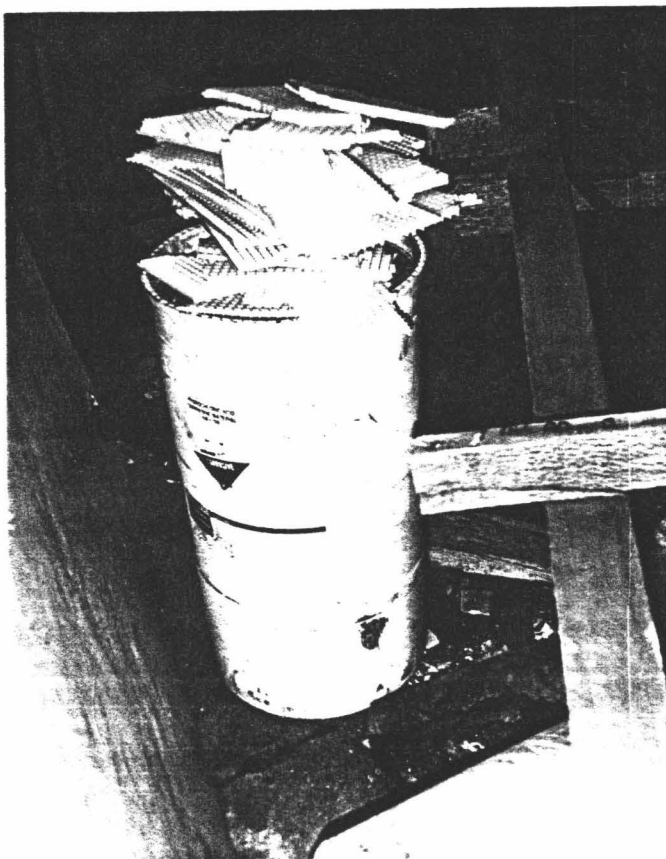


Photo # 30

Photographer: SMR

Date: 2-24-92

Direction: S  
(facing)

Description: Dumpster on north side of  
building No. 5.



**Terracon**

**PHOTO LOG**

Project No. 10-D247-20

Photo # 31

Photographer: SMR

Date: 2-24-92

Direction: 5

(facing)

Description: Vent duct on south side of  
building No. 5.

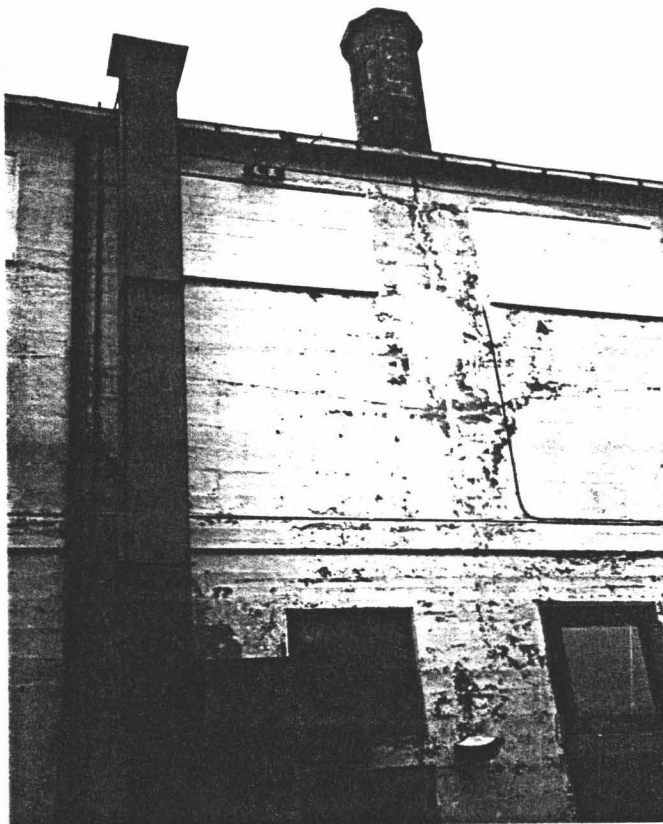


Photo # 32

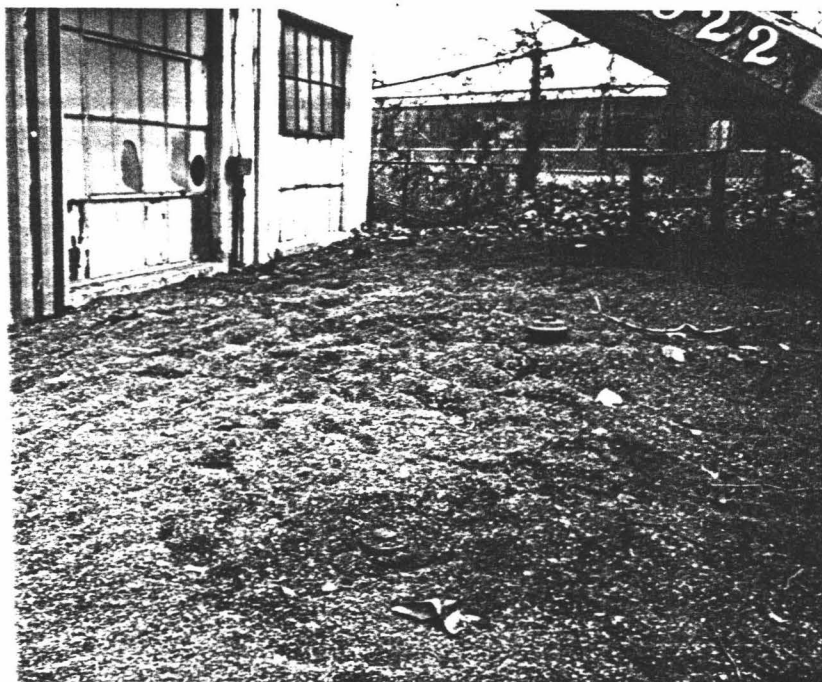
Photographer: SMR

Date: 2-24-92

Direction: E

(facing)

Description: Four USTs on south side  
of building No. 5.



**Terracon**

# PHOTO LOG

Project No. 10-D247-20

Photo # 33

Photographer: SMR

Date: 2-24-92

Direction: NE

(facing)

Description: Railroad tracks on southeast side of property. Wolman Wood Products is on the right.



Photo # 34

Photographer: SMR

Date: 2-24-92

Direction: S

(facing)

Description: Southern tip of property. Marconi Avenue and residences are on the right.



Terracon

# PHOTO LOG

Project No. 10-D247-20

Photo # 35

Photographer: SMR

Date: 2-24-92

Direction: S

(facing)

Description: Building No. 2A is on the left. Marconi Avenue and residences are on the right.



Photo # 36

Photographer: SMR

Date: 2-24-92

Direction: N

(facing)

Description: Restaurants and residences along Marconi Avenue north of Bischoff Avenue.



Terracon

**APPENDIX D**

**ENVIRONMENTAL/RISK ASSESSMENT REPORTS**

27.085 (McQuay-Norris) SKF Foundry  
PRIVILEGED COMMUNICATION

THIS MATERIAL HAS BEEN PREPARED FOR THE  
ASSISTANCE AND OPINION OF LEGAL COUNSEL  
AND, AS SUCH, IS SUBJECT TO THE SOLICITOR -  
CLIENT PRIVILEGE.

RECEIVED

MAR 10 1989

SLRO

ENVIRONMENTAL RISK ASSESSMENT

OF THE

MCQUAY-NORRIS FACILITY

IN

ST. LOUIS, MISSOURI

PREPARED BY

RISK SCIENCE INTERNATIONAL  
1101 30TH STREET, N.W.

SUITE 4  
WASHINGTON, D.C. 20036

FINAL REPORT  
JULY 8, 1986

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### Executive Summary

McQuay-Norris, Inc., a subsidiary of SKF Industries, produces piston rings and other engine parts. The 75-year-old facility is located on a 9-acre site in St. Louis. The cast iron parts are machined, degreased, and plated. The parts are plated with tin, zinc phosphate, or chromium. The overall risk of serious, nonsudden environmental impairment is moderate-to-high, and the sudden risk is low-to-moderate.

Process wastewater consists of plating rinsewater. The effluent contains many heavy metals, and concentrations of chromium have exceeded effluent limits. Organic compounds, including 1,1,1-trichloroethane, have been detected at concentrations far above the effluent limits. PCBs were detected in one sample of water from the chromium rinsewater sump, although subsequent samples were reportedly free of PCBs. The company should conduct further monitoring and analysis to determine whether PCBs are still present in the wastewater and, if so, to determine the probable source.

There is one underground tank that is sound, according to crude inventory methods. The tank was abandoned and filled with gravel. Other potential sources of groundwater contamination, such as the wastewater sumps and abandoned underground tanks, are apparently sound. In 1984, a kerosene recovery operation resulted in contamination of soil with kerosene.

Air emission sources include chromic acid and other fumes from the plating tanks, metal particles from the machine shops,

and insignificant quantities of volatile organic compounds from painting and degreasing. The chromic acid emissions are controlled with a wet device, and the metal particles are collected by baghouses.

The facility is located in a densely populated, urban residential neighborhood. There are several other industrial operations nearby, including a wood preservative manufacturer. There is no groundwater use in the area.

Hazardous wastes such as plating sludges and solutions, sodium cyanide, and spent oils and solvent are stored in a separate building and disposed of off-site. Facility management practices are currently adequate, although the company had been cited for numerous violations of RCRA in the past.

In summary, the following are the positive aspects of the facility:

1. There is only one active underground storage tank (for gasoline) and no active aboveground storage tanks.
2. All significant air emissions, including chromic acid fumes and metal particles, are well controlled.

The following are the negative aspects of the facility:

1. Wastewater discharges have violated effluent limits for chromium and 1,1,1-trichloroethane, and have been found to contain PCBs of unknown origin.
2. The company does not monitor its wastewater, but rather relies on the quarterly monitoring of the Metropolitan St. Louis Sewer District.

3. Kerosene was spilled in a recovery operation that has been discontinued, resulting in soil contamination.

## Introduction

This environmental exposure or risk assessment combines evaluative and integrative approaches. The four factors contributing to the risk of environmental exposures or liabilities from a facility to third parties off-site are individually evaluated. The data contributing to the risk from each factor are integrated to determine the overall risk of environmental impairment, exposures, liabilities, or claims from the assessed facility. The risk from each factor is scored as low, low-to-moderate, moderate, moderate-to-high, or high, as is the overall, integrated risk.

The four individually evaluated factors contributing to the risk from a facility are:

- 1) Environmental Routes
- 2) Target Populations
- 3) Facility Operations and Practices
- 4) Characteristics of Materials

Each factor and the overall risk are evaluated for their potential to cause sudden impairment and nonsudden impairment. Sudden impairment results from those events that occur abruptly, relatively quickly, and in a short time. Spills, explosions, and container ruptures are examples of sudden events. Nonsudden impairment occurs over an extended period of time. Nonsudden impairment can result from repeated sudden events, such as the daily discharge of an effluent, or from emissions that only move slowly from the facility, such as leaks from underground tanks, daily air emissions, or seepage

from a landfill. Environmental impairment that cannot be characterized as to its suddenness is discussed under one of the categories. This division of the time course of impairment is made primarily for the purpose of insurance evaluation.

The Environmental Routes are the pathways by which materials could move off the premises of the facility. Assessment of the Routes involves determining whether materials could travel off-site by entering the surface water, the ambient air, groundwater, and soil. All groundwater, even that beneath the facility, is considered to be public domain. The assessment of the Routes also takes into account the existence, design and effectiveness of any devices or natural features controlling, minimizing or preventing the movement of materials from the site.

The risk due to the nature of the Target Populations is assessed by evaluating what could potentially be affected by any materials moving off the premises, whether a route to these populations exists or not. Evaluating Target Populations involves describing the ambient environment around a facility. The use of groundwater or surface water is factored into the evaluation, but any potential for impairment of these resources is considered serious. The quality of local air, surface waters and groundwater is assessed as are the characteristics of the neighborhood around the facility. Additionally, the potential for a facility to be affected or implicated in neighborhood or regional environmental problems is evaluated in assessing this factor. This indicates the

perception of the facility in the community.

The assessment of Facility Operations and Practices examines those areas that could directly or indirectly contribute to environmental exposures, impairment, liabilities, or claims off-site. It also examines those areas that could be indicative of the state of environmental practices at the facility. The facility management is rated on how well they understand and evaluate environmental exposures, such as through the collection of monitoring data. General compliance with environmental regulations is assessed. The ability to prevent and respond to accidents that could lead to environmental exposures is evaluated. Facility housekeeping, equipment maintenance, inspection procedures, and workplace safety are used as barometers of management attitudes, and past practices relating to environmental controls and waste disposal are incorporated into the evaluation of current practices. Liabilities arising from third-party disposal sites are not factored into this assessment.

The Characteristics of the Materials that have the greatest potential to move off-site are evaluated with respect to their potential to cause health or environmental problems through sudden or nonsudden exposures. The Materials assessed include raw materials, intermediates and contaminants, as appropriate, as well as waste products from present, past and sometimes future operations. The risk evaluation is based not only on the health and environmental effects of the Materials but also on the quantities present. The effects through all

possible exposure routes are assessed, as are the effects of acute and chronic exposures. The assessments of the Materials are based on reviews of the secondary literature. Areas of current controversy concerning health effects are not deemed to mitigate the risk.

The Overall Risk is based on the interaction and integration of the four factors described above. Each factor has the potential to exacerbate or mitigate the risks presented by the others, therefore the overall risk is not simply the sum or highest of the risk factors. The Overall Risk is a qualitative assessment of the potential for environmental exposures, impairment, liabilities, or claims from a facility. Five levels of risk are used to preclude quantitative interpretation of the assessment.

This report was prepared by Risk Science International (RSI) to assist SKF Industries in obtaining liability insurance. It is based on a visit to the McQuay-Norris facility in St. Louis, Missouri, on January 30, 1986. The site was visited by Michael J. Brown, Ph.D., Staff Engineer of RSI, who is the principal author of this report. He was assisted on the site visit by Jim Stromske, Environmental Specialist. The report is also based on materials provided to RSI by McQuay-Norris.

#### Disclaimer

This report is based in part on information supplied by McQuay-Norris, Inc., which has not been independently verified

by RSI. While this report is accurate to the best of RSI's knowledge and belief, RSI cannot guarantee the completeness or accuracy of any descriptions or conclusions based on the supplied information.

### Facility Description

McQuay-Norris, Inc., is located at 2320 Marconi Avenue, in St. Louis, Missouri, 63110. McQuay-Norris, a subsidiary of SKF Industries, produces piston rings, transmission seal rings, and other mechanical parts for automobile and lawn mower engines. The facility is on a nine-acre site. The plant has operated since 1910, before which it was an empty lot. An SKF foundry that had operated on the site was moved to Washington, Missouri, in 1971. The plant employs 100 people.

Most of the activities are conducted in a large building (Figure 1). This main plant houses the plating (section 2A), machining (2, 3, and 4), and shipping (2A) operations and a raw material storage area (25). About a dozen smaller structures are used for offices (1, 5, 10, 19, and 27), maintenance (22), warehouses (7 and 20), chrome plating (23), printing (24), hazardous waste storage (30), and metal spraying (32).

The process consists primarily of electroplating, machining, and degreasing. The main raw material is castings from the SKF Foundry in Washington, Missouri. Other materials include plating chemicals (chromic acid, zinc phosphate, and tin compounds), hydraulic and water soluble oils, the solvents 1,1,1-trichloroethane (TCA) and acetone, acid and alkaline cleaners, and sodium cyanide.

Iron and steel castings for piston rings and other parts arrive in tubs. The castings are first machined in several steps. The machining operations include rough turn and bore, splitting, finish turn and bore, and finish splitting. A

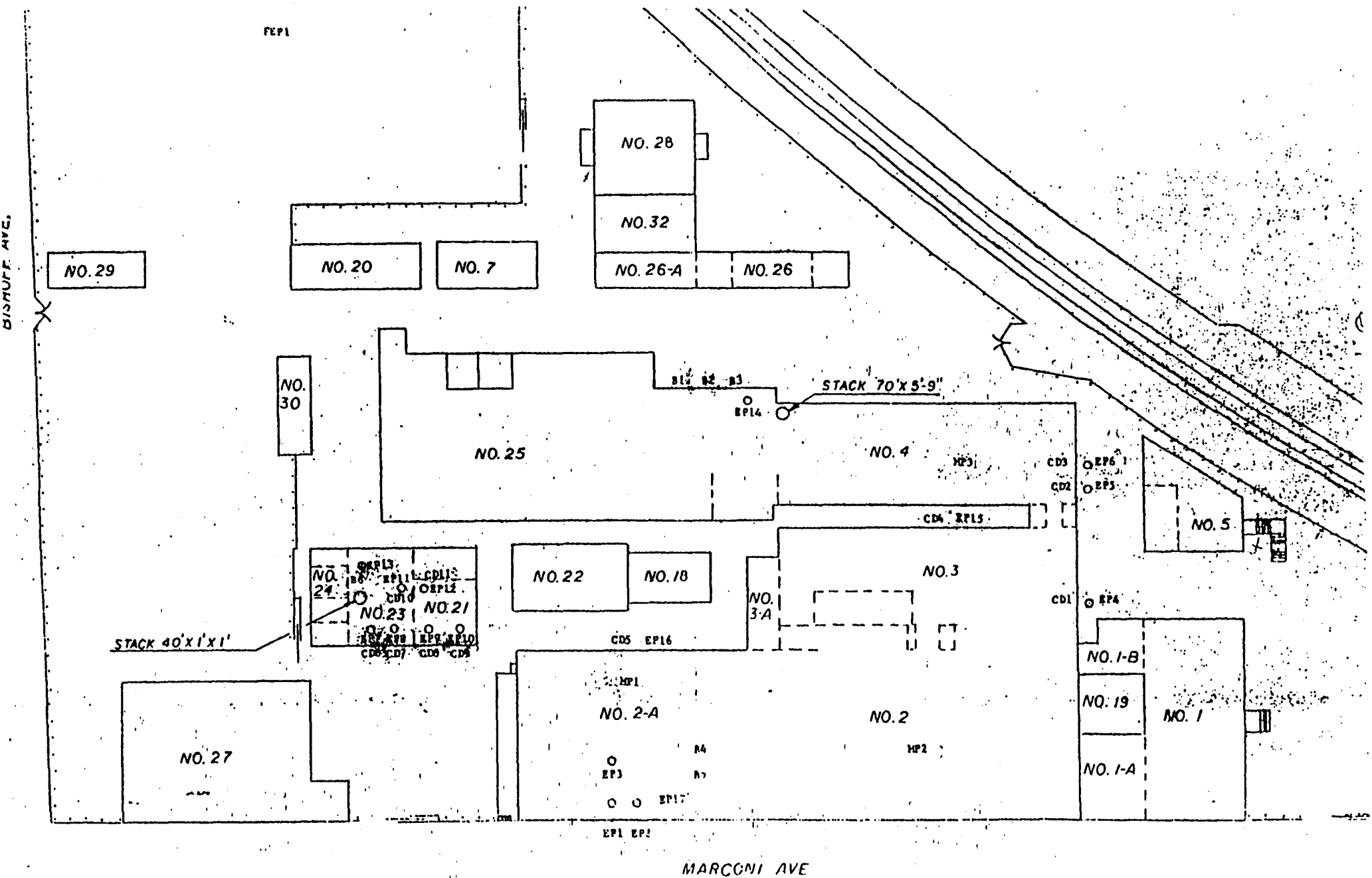


Figure 1 - Layout of the McQuay-Norris facility

variety of special machining activities may also take place, such as cutting slots into automotive oil rings. The slotted rings are blasted with glass beads in order to remove burrs.

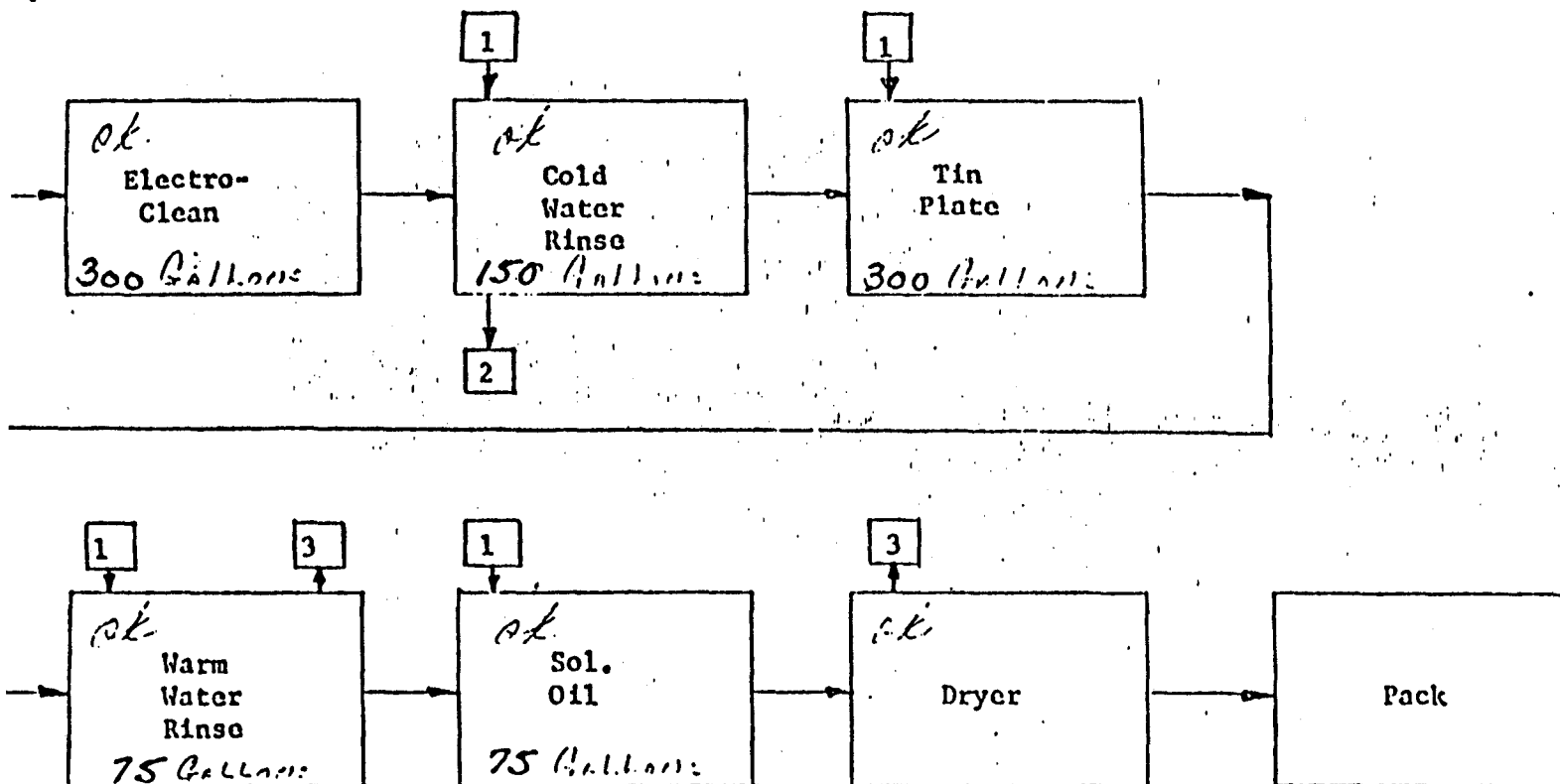
A water soluble cutting oil and mineral seal oil are used in the machine shops. The rings are dipped in TCA to remove oil.

The three types of plating are tin, zinc phosphate, and chromium. About 80 percent of the rings produced at the plant are plated. Each plating operation involves dipping the rings into a series of tanks. Tin plating is done manually, while the others are done automatically.

Tin plating (Figure 2) begins with an electrolytic cleaning tank containing an alkaline cleaner. A cold water rinse removes the cleaning solution. The plating tank contains a solution of potassium hydroxide and potassium stannate, which provides the tin. This is followed by a warm water rinse and a dip in a one percent solution of hot, soluble oil to prevent oxidation. Finally, the plated metal is placed in a dryer.

Zinc phosphate plating (Figure 3) begins with cleaning with 10 percent sulfuric acid, cleaning with a 10 percent solution of alkaline cleaner, a hot water rinse, and a cold water spray. The plating tank contains a solution of zinc phosphate and calcium permeated with hydrogen bubbles. There is no electric current. The process ends with another cold water spray, a dip in a 0.5 percent solution of chromic acid (Parkoline), and drying.

Rings to be plated with chromium are first coated with wax



<u>NUMBER</u>	<u>SOURCE OF DESTINATION</u>	<u>AVERAGE RATE (GPM)</u>	<u>USE</u>
1	Municipal Water	7	Process
2	To Municipal Sewer	6	Process
3	Evaporation	1	Process

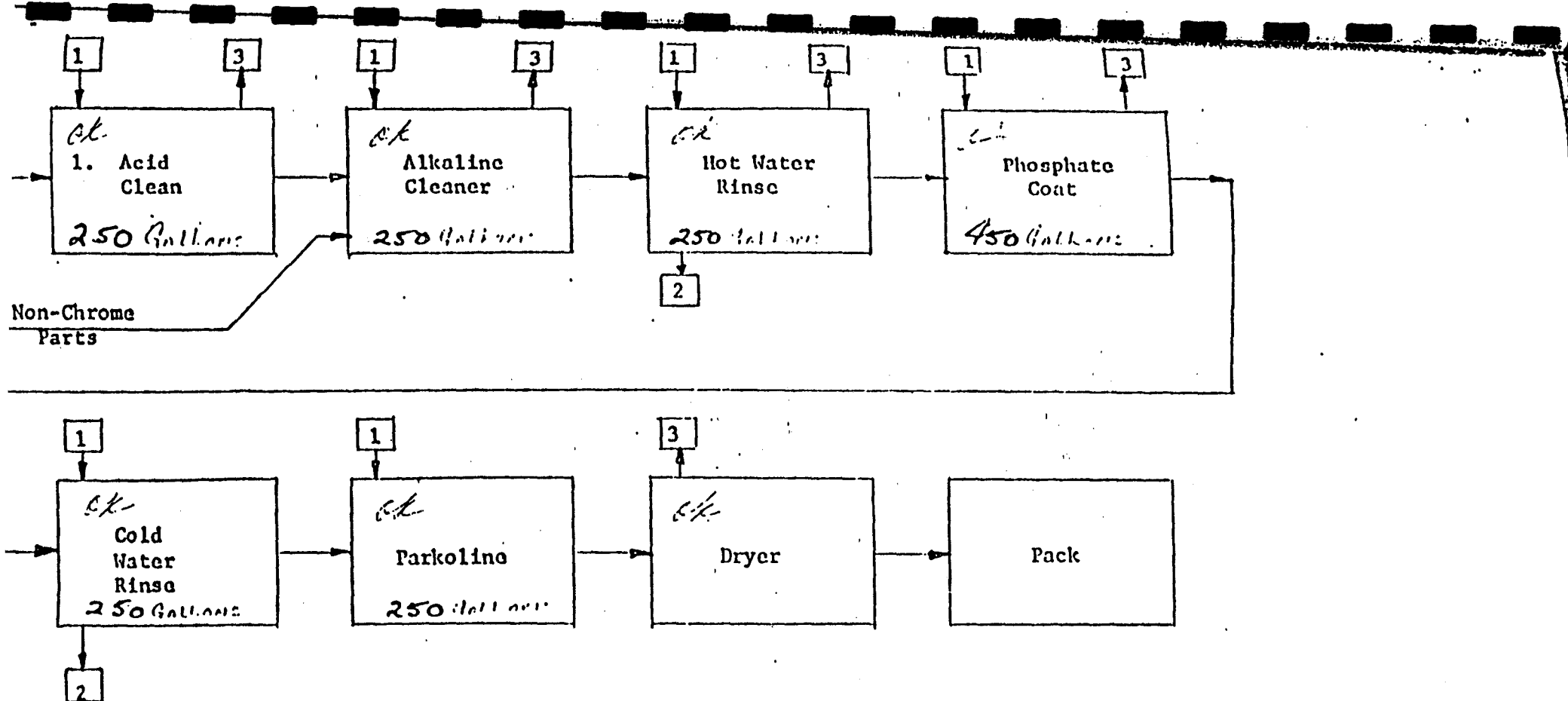
Figure 2 - Tin plating process diagram

McQuay-Norris, Inc.  
Company Name

OEM - St. Louis  
Identification

63110  
Plant Location (Zip Code)

700 GAL / MIN



<u>NUMBER</u>	<u>SOURCE OF DESTINATION</u>	<u>AVERAGE RATE (GPM)</u>	<u>USE</u>
1	Municipal Water	42	Process
2	To Municipal Sewer	34	Process
3	Evaporation	8	Process

Figure 3 - Zinc phosphate plating process diagram

McQuay-Norris, Inc.  
 Company Name  
 OEM - St. Louis.  
 Identification  
 63110  
 Plant Location (Zip Code)

on the inside and then subjected to a vapor blast (Figure 4). They are dipped in one of four plating tanks containing chromic acid and then rinsed in a series of three tanks. The rinse water is in a closed loop. The wax is broken loose from the rings and they are further rinsed in cold water, hot water, and detergent. Stripes are spray painted on finished rings. The painted area is cleaned with acetone.

The weld shop has a heat treat furnace that is used to harden tools from the machine shop. The process involves immersion in a bath containing a 15 percent solution of sodium cyanide.

There are three steel, 1,000-gallon underground storage tanks near building 5 that are filled with gravel. They previously were used to store gasoline. A fourth steel, 1,000-gallon underground tank for gasoline was active at the time of the RSI visit but reportedly has since been abandoned and filled with gravel. This tank is 20 years old. The sole aboveground tank, now empty, had contained up to 1,000 gallons of diesel fuel. The company plans to remove and dispose of the tank.

#### Water and Wastewater Systems

The plant obtains its water supply from the St. Louis municipal system, which draws from the Missouri River. All wastewater discharges are made to the Metropolitan St. Louis Sewer District (MSD). The main source of process wastewater is plating (Figures 2, 3, and 4).

Wastewaters from the tin and the zinc phosphate plating

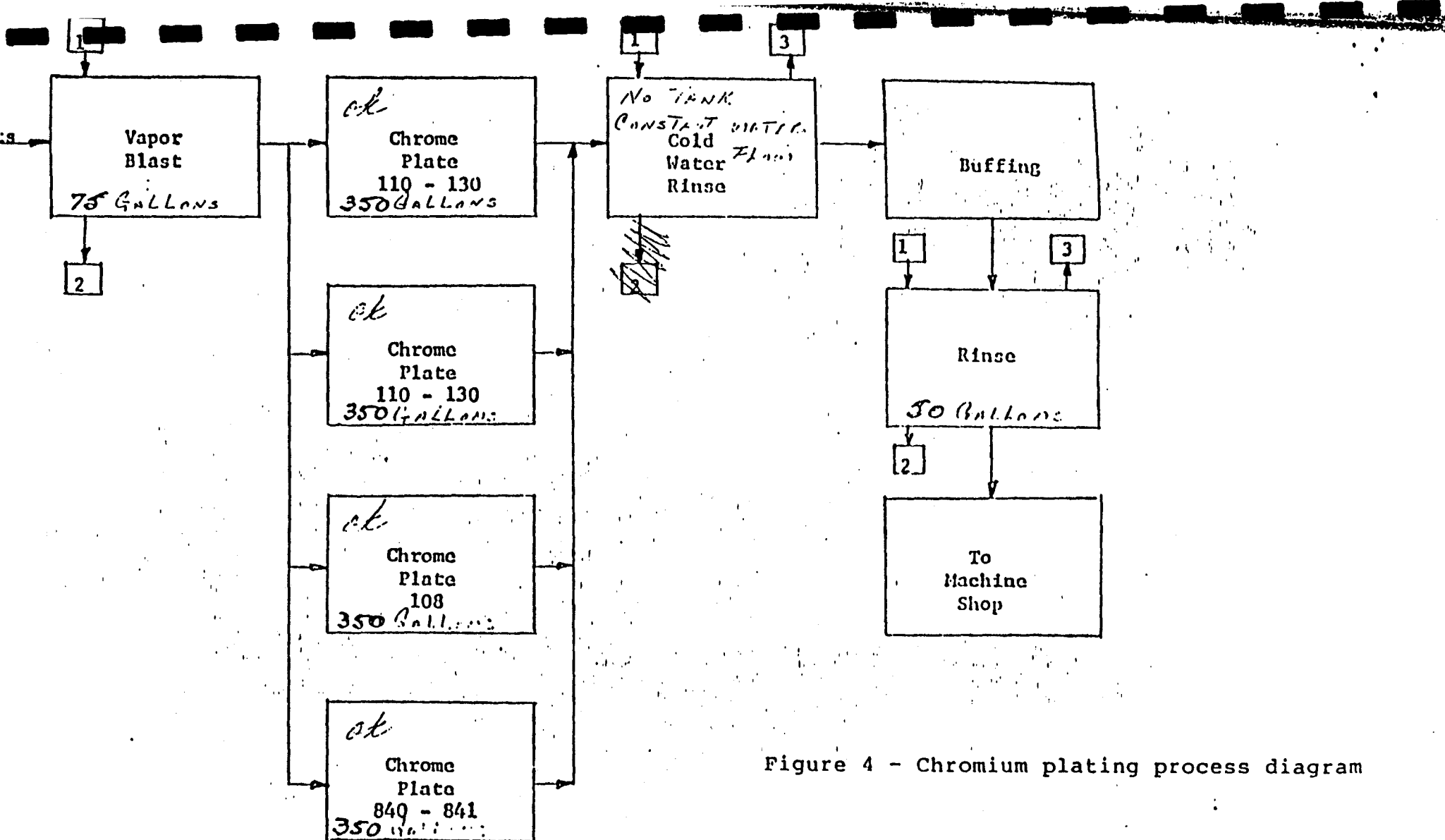


Figure 4 - Chromium plating process diagram

<u>NUMBER</u>	<u>SOURCE OF DESTINATION</u>	<u>AVERAGE RATE (GPH)</u>	<u>USE</u>
1	Municipal Water	20	Process
2	To Municipal Sewer	17	Process
3	Evaporation	3	Process

operations, which are located in the same section of the main building, are discharged in a common outfall. The discharges originate in the hot and cold water rinses. The discharge from tin plating averages 6 gallons per minute (gpm), while zinc phosphate plating discharges 34 gpm. Water containing soluble oil is occasionally discharged from the zinc phosphate operation. The actual plating solutions are used for several years without being changed, and they are not discharged to the sewer.

The chromium plating line has a closed loop rinse system immediately downstream of the plating tanks. Water flows in response to float switches from Tank 3 to Tank 2 to Tank 1. The rinse water from the three tanks serves as makeup for the plating tanks. The water flows to a holding tank, through a cation exchanger, to a second holding tank. The second holding tank provides any required makeup water to the plating tanks. The only discharge from chromium plating consists of about 17 gpm from the final rinse that follows wax removal.

Other discharges to the sanitary sewer include sanitary wastewater and boiler blowdown.

MSD requires no permit for the discharges. The company does not monitor the effluent, but MSD monitors quarterly and sends McQuay-Norris the results (Appendix A).

All stormwater runoff from the site flows into combined sewers leading to the MSD treatment facility.

#### Solid Waste Systems

The facility generates several types of hazardous waste

(Appendix B). About 1,000 gallons per year of spent TCA are reclaimed by Clayton Chemical Company of Sauget, Illinois. This company handled the waste TCE from the facility in the past, before McQuay-Norris switched from TCE to TCA. Before 1985, TCA was filtered on-site and reused.

About 50 kg/year of waste cyanide liquids and sludges are treated and disposed of at ILWD, Inc., in Indianapolis, Indiana. Sulfuric acid solutions, chromic acid sludge and liquids, and other corrosive wastes from chromium plating are also handled by ILWD. The company had previously disposed of a manganese phosphate (Parko-Lubrize) sludge at Bob's Home Service of Wright City, Missouri. Parko-Lubrize is no longer used. Plating wastes total about 400 gallons per year. Waste oil, which is considered hazardous in Missouri, is reclaimed by Arkansas Oil Company.

Nonhazardous metal chips and shavings are reclaimed for the iron by Grossman Iron, Inc., of St. Louis. Trash and glass bead fragments from shot blasting are disposed of in a sanitary landfill.

McQuay-Norris is registered as a generator of hazardous waste (EPA ID no. MOT 300010345). The company also has interim status as a storage facility under RCRA for protective purposes, although wastes are generally stored for less than 90 days.

During the 1960s and earlier, spent plating solutions and other wastes now handled as hazardous were discharged to the MSD sewer.

There are several transformers on the site that reportedly do not contain PCBs, although the transformers have not actually been tested.

#### Air Emissions

The emissions inventory submitted to the DNR (Appendix C) lists 16 emission points (Figure 5). The machining (turn and bore) operations are a source of particulates, primarily pieces of iron. Five baghouses control these emissions with an estimated efficiency of 99.5 to 99.7 percent. The collected shavings are sold as scrap.

The plating baths emit several types of fumes. Some plating tanks are connected to vents in order to reduce the contaminant levels in the working area. Each chromic acid tank is a source of acid mists, but the fumes are controlled by water rings with an estimated efficiency of 99.7 percent. The cleaning tank for tin plating, which contains an alkaline cleaner, is vented to the outside with no emission controls. The zinc phosphate plating tank is also vented with no controls.

There are six natural gas boilers which emit minor quantities of carbon monoxide and other pollutants. The degreasing operations are a source of TCA vapors. The small spray painting operation is a source of minor quantities of volatile organic compounds.

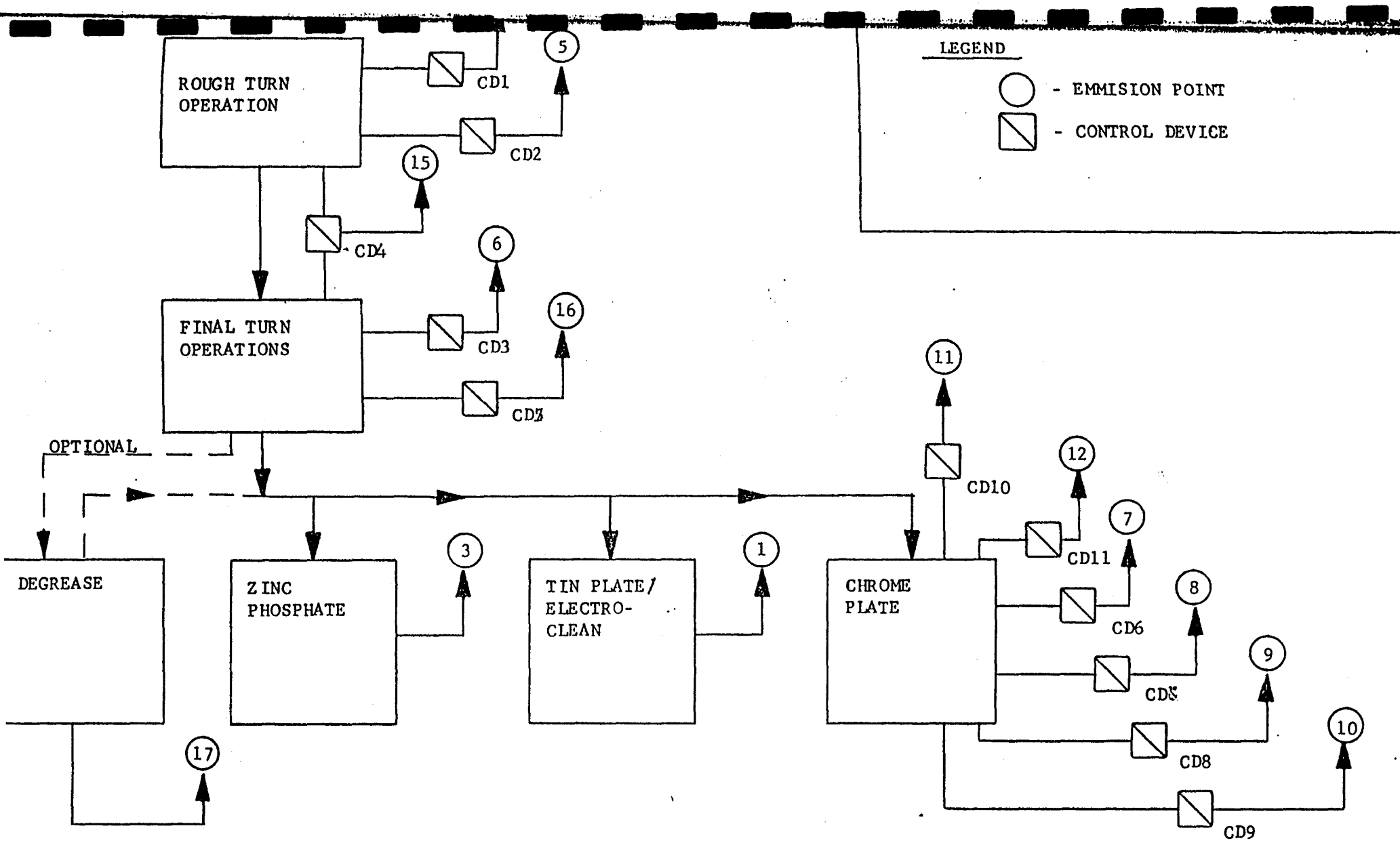


Figure 5 - Air emission sources

Risk Assessment of the McQuay-Norris Facility in St. Louis,  
Missouri

RSI uses four factors to evaluate the risk of environmental impairment:

1. Environmental routes
2. Target populations
3. Facility operations and practices
4. Characteristics of materials

These four factors are applied to the McQuay-Norris facility.

Environmental Routes

Surface Water

The discharge rinse waters from tin and zinc plating contain the residues from dipping parts in alkaline cleaners and therefore have a high pH. The cold water rinse following the zinc plating tank probably also contributes zinc to the effluent. The rinse water immediately following chrome plating is not discharged but instead flows into the plating tanks. Water from the final rinse is discharged and contains chromium.

The zinc phosphate plating discharges (sample point 001), which account for about 84 percent of total effluent, are generally within MSD limits (Appendix A). The zinc concentration is more than an order of magnitude less than the 3 mg/l limit on average concentration. Cadmium, chromium, copper, lead, and nickel have also been detected in this effluent stream, but concentrations are usually far below regulatory limits.

The metal of greatest concern in the zinc plating discharge appears to be lead. In March and May 1984, lead was found at 0.1 mg/l and 0.3 mg/l. MSD regulations limit the average lead concentrations to 0.2 mg/l and the maximum to 0.6 mg/l. The source of lead in the wastewater is not apparent, because the base metal in plating is reportedly nearly 100 percent iron.

The zinc phosphate plating wastewater also had a high concentration of a chlorinated organic compound in one 1984 sample. The trichloroethene concentration was 0.383 mg/l, while the effluent limit is 0.001 mg/l. This could be a result of degreasing before plating, although currently TCA is the only degreasing agent in use.

Wastewater from chromium plating (sample points 3 and 5) generally contains more than 1 mg/l chromium. One sample from the rinsewater sump contained 16 mg/l chromium, a violation of the 7 mg/l maximum. The lead level is commonly near or above the 0.4 mg/l limit on average concentration.

Since the RSI site visit, the chromium plating line has reportedly been converted to a closed loop system, with no discharge to the sewer. This would reduce chromium concentrations in discharges.

In addition, one sample from the sump was analyzed for PCBs and contained 3.74 mg/l. Although plant personnel did not know the source, this could indicate serious contamination. Perhaps lubricating oils used in the facility contained PCBs, and residues remain in the sump. PCBs were reportedly not

detected in subsequent samples.

The remaining sampling points (nos. 2, 4, and 6) reportedly represent sanitary wastewater and flow from maintenance areas. One sample contained 2.6 mg/l TCA, a 90-fold exceedence of the limit.

The company discharges soluble oil with the tin plating discharge. MSD did not monitor the effluent for oil and grease, so it is not known whether this causes a violation of the 100 mg/l limit. MSD personnel do not view the discharges from McQuay-Norris as a problem.

An air compressor from which oil has leaked or blown down is located adjacent to a stormdrain. It is likely that releases of oil from the compressor result in discharges of oil to the POTW.

Spills of fresh or waste oil or TCA are the primary sudden risk through the surface water route. These materials are stored inside buildings. Although the storage areas are not contained, most spills could easily be stopped before releases are made to a sewer.

The risk of nonsudden impairment through the surface water route is moderate-to-high because of an effluent with metallic and organic residues from plating and degreasing. This risk could be reduced if the company could demonstrate through further monitoring that there is no longer any PCB contamination in the effluent. The sudden risk is low-to-moderate.

#### Groundwater

The company had no information on subsurface hydro-

geology. Generally, in the St. Louis area, bedrock is overlain by clay and silt. There is no groundwater use in the area. Wastewater from the plating operations collects in two concrete catch basins followed by two sumps. Leaks of wastewater from one of the sumps could carry chromium and other pollutants to the groundwater. The sumps were inspected by the Sitex Corporation of Maryland Heights, Missouri, in July 1985 and found to be sound, although the bottom of one sump could not be thoroughly inspected because of a layer of oil remaining after dewatering.

The three previously abandoned underground gasoline tanks were reportedly tested and found to be free of leaks. The fourth underground gasoline tank, which reportedly was recently abandoned, was crudely tested by making dipstick measurements over a period of a week. If the tank has not been pressure-tested, soil borings should be conducted in order to determine whether any releases have occurred. The tank is made of steel and is 20 years old, which increases the potential that it corroded. A leak could release petroleum hydrocarbons to the groundwater. An aboveground diesel fuel tank is located in a diked gravel-covered area. It is no longer used and is empty, and reportedly never leaked. There was no visible evidence of spilled fuel in the diked area on the day of the RSI site visit.

In the past, the company recovered TCA and kerosene in two small tanks outside. The tanks are no longer used. Soil testing by the Sitex Corporation indicated evidence of spilled

kerosene, with a concentration of 50 ppm in one sample. No TCA was detected above the detection limit of 10 ppm. Hydrocarbons associated with kerosene could affect the groundwater. The ground near an air compressor was also stained by oil that was blown down or spilled.

Hazardous wastes are stored inside of a small building. Although it is possible for spilled waste to escape, a small quantity spill would probably be contained inside the building.

The risk associated with nonsudden releases to groundwater is moderate, because of past spills of kerosene and the presence of an old underground fuel tank that has not been accurately tested for leaks. The sudden risk is low-to-moderate and is derived from the potential for spills of liquid materials or wastes on the ground.

#### Air

The emission inventory (Appendix C) indicates that the facility emits about one ton of total suspended particulates (TSP) per year. Half the estimated emissions come from the zinc plating area and consists of mists from the baths. Most of the remaining TSP consists of fine metal particles from the turn and bore machines not captured by the baghouses. Small quantities of chromic acid are released from the chromium plating bath, but most is captured by the water rings.

The only fuel currently burned in the boilers is natural gas, so emissions are limited to relatively small quantities of pollutants such as carbon monoxide and light hydrocarbons. The

painting of stripes on piston rings is such a small operation that its contribution to VOC emissions is negligible. The emission of TCA vapors from degreasing areas is not extensive. The gravel parking lot is a source of fugitive dust emissions, which are reduced by a 5-mph speed limit.

The company has reportedly received no complaints about odors, dust, or noise.

The risk of nonsudden or sudden releases through the air route is low-to-moderate.

#### Summary

The risk of nonsudden environmental impairment through one of the three environmental routes is moderate-to-high. the wastewater discharges sometimes violate regulatory limits for metals and toxic organic compounds, and PCBs have been detected. There is some risk of groundwater contamination from past spills of kerosene and from underground storage tanks. The sudden risk, primarily from spills of stored raw materials or wastes, is low-to-moderate.

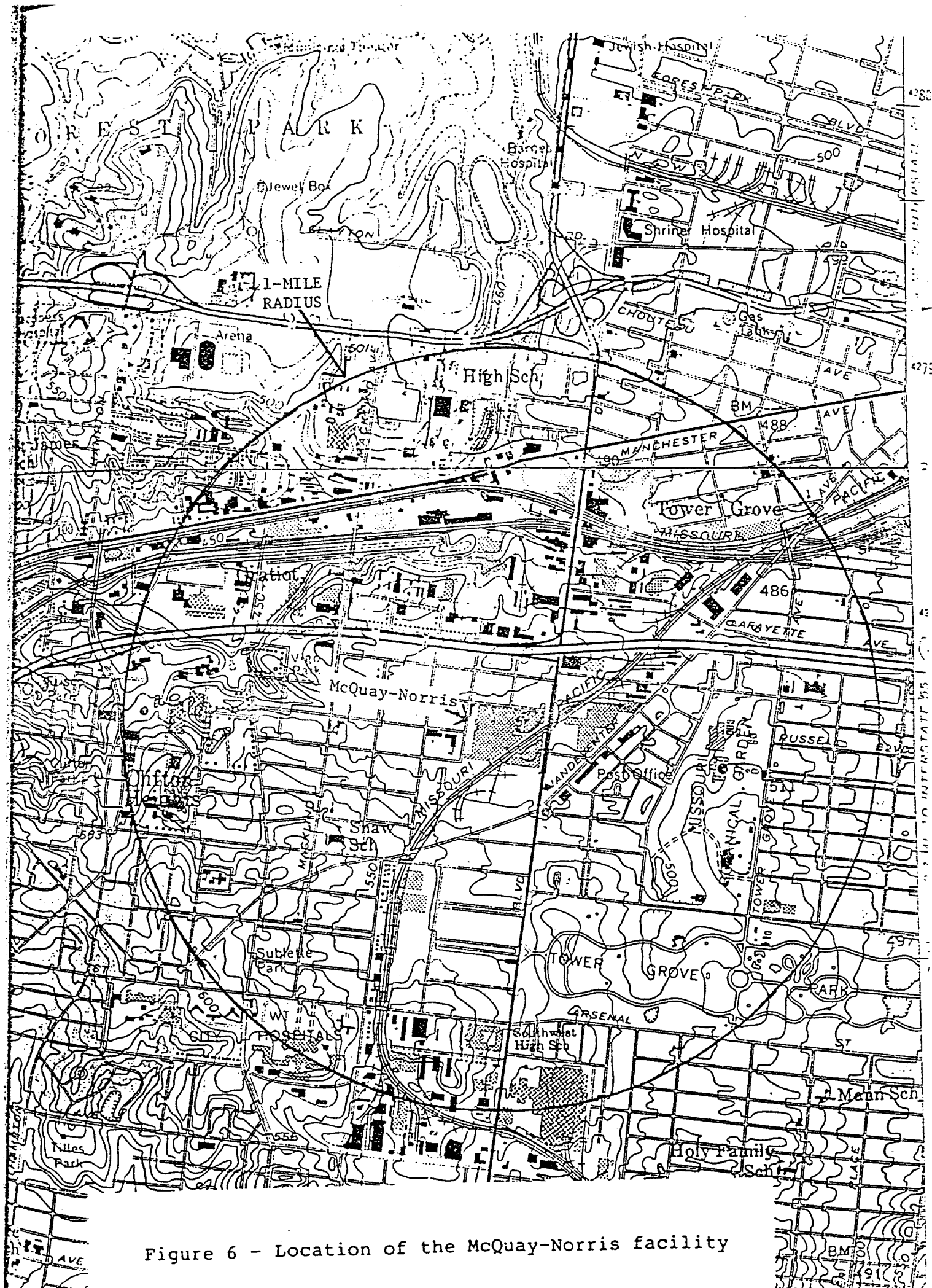


Figure 6 - Location of the McQuay-Norris facility

### Facility Operations and Practices

The entire site is fenced, and the plant is served by electronic security and fire protection systems. The gates are locked at night. The plant operates 16 hours a day, 5 days a week. There have reportedly been no security problems.

McQuay-Norris personnel conduct a weekly inspection of process tanks, valves, and pipes; and waste and raw materials storage areas, valves, and spill control kits.

Raw materials are stored in a designated area in the main plant building. Solvents, oils and other chemicals in drums as well as castings are stored in this area. Wastes, primarily oil and TCA, are stored in small buildings. Neither storage area has containment against spills, although only a large spill is likely to flow out of either building.

The facility is inspected annually by the DNR for compliance with RCRA. Each of the last two inspections resulted in violations, mostly minor. According to an inspection in September 1985, hazardous waste drums were not labeled with the generator identification number, and one drum of waste TCA was in the raw material storage area instead of the waste storage area.

An inspection a year earlier showed numerous violations of RCRA regulations for generators. The most serious violation was storage of unregistered hazardous waste for more than 90 days. Others involved inadequate or nonexistent labeling, contingency plans, preparedness and prevention plans, waste analysis plans, and inspection documentation.

It is apparent that as recently as 1984, the company had taken few steps to comply with RCRA requirements. Nevertheless, there is no evidence that hazardous waste was improperly disposed of, and the company is now fully in compliance. An RSI contact with the DNR inspector confirmed that there are currently few waste management problems.

During normal operations, the only protection required for workers is goggles in the machine shops and plating areas. Spill kits and self-contained breathing apparatus are available for emergencies. A hazard communication program is being implemented, and the company retains an emergency response team. The company has prepared a contingency plan and a spill prevention, control and countermeasure plan, both of which appeared adequate.

There have been no fires or explosions, and there is no significant potential for fires or explosions.

The sudden and nonsudden risks associated with facility operations and practices are moderate. Demonstration of continued compliance with RCRA requirements would reduce this risk.

## Characteristics of Materials

### Polychlorinated Biphenyls

Polychlorinated biphenyls (PCBs) are a complex mixture of many related compounds. The compounds vary in the degree and position of chlorination. PCBs can be absorbed by animals orally, dermally, and by inhalation. PCBs are strong irritants; dermal exposures can cause chloracne. They show very low levels of acute toxicity. In acute oral exposures to rats, the  $LD_{50}$ s range from 4-11 g/kg for different PCBs. For dermal exposures to rabbits, the  $LD_{50}$  varied from 1-4 g/kg. Edema, jaundice, vomiting, anorexia, nausea, abdominal pains, and fatigue can result from acute exposures to PCBs. As indicated by the jaundice, PCBs can have a toxic effect on the liver.

PCBs have been found to have a number of toxic effects in chronic exposure studies in laboratory and wild animals. Mice, rats, pelicans, and dogs show severe liver damage. Rats, monkeys, minks, and chickens show reproductive toxicity effects, including reduced sperm counts. PCBs also can affect growth, as seen in chickens, dogs, and minks. The compounds have been shown to be teratogenic in avian species. While no chromosomal effects have been found to result from PCB exposures, mutagenicity has been displayed in bacterial systems. The carcinogenic action of PCBs has been shown in rats and mice.

In humans, the effects from PCB exposure can be delayed for months. These effects include: nausea, lethargy,

chloracne, facial edema, gastrointestinal distress, and jaundice. PCBs are fetotoxic and teratogenic, being readily transported across the placenta. PCBs can also cause suppression of both the humoral and cellular immune responses. Their potential to cause tumors in humans is fairly conclusive.

PCBs are extremely persistent in the environment. They are extremely stable, inert to hydrolysis and not reactive. They can be photodegraded, but only a small amount of the PCBs in the environment are usually exposed to the sun. PCBs can be biodegraded, depending on the degree and position of the chlorination. They are adsorbed strongly on soils with a high organic content. As a result, in aquatic systems, PCBs are mostly found in the sediments. As indicated by their very high octanol-water partition coefficient, PCBs are extraordinarily highly bioaccumulative.

#### 1,1,1-Trichloroethane

1,1,1-Trichloroethane, also known as methyl chloroform, is a volatile, colorless liquid that has low solubility in water. It is not flammable and tends to be highly stable in the atmosphere. It has the potential to destroy atmospheric ozone. It tends to be persistent in most environmental systems, although under some conditions, it can degrade to vinylidene chloride, an acknowledged carcinogen.

1,1,1-Trichloroethane is probably the least toxic chlorinated solvent. It is considerably less toxic than 1,1,2-trichloroethane. It is rapidly absorbed orally or by

inhalation. In humans, there is also slow absorption through the skin. Most of the compound is excreted intact; very little is metabolized. The compound tends to accumulate in the liver, kidneys and brain. It does not show high levels of acute toxicity. Exposure to 1,1,1-trichloroethane can cause depression of the central nervous system. At very high exposures that have resulted from carelessness in the workplace, anesthetic deaths have occurred. Individuals removed before death show a complete recovery. In inhalation studies with laboratory animals, the maximum concentration at which no injury was found was very close to the maximum level for survival. The oral LD<sub>50</sub>s are 750 mg/kg in the dog, 9.5 g/kg in the guinea pig, 5.6 g/kg in the rabbit, 11.2 g/kg in the mouse, and 10.3 g/kg in the rat. In all cases, death was primarily due to anesthesia. The compound can act as a minor skin and eye irritant. At very high exposures, 1,1,1-trichloroethane can cause lethal cardiac effects; e.g., arrhythmias. However, injury to organs is not generally found. The OSHA TWA is 350 ppm. Testing 1,1,1-trichloroethane for carcinogenic potential has produced negative results. In bacterial tests, there was little evidence of mutagenic activity. No teratogenic effects were found.

#### Kerosene

Kerosene is a liquid consisting chiefly of C<sub>10</sub>-C<sub>16</sub> linear and branched aliphatics, olefins, cycloparaffins and aromatics. Kerosene does not demonstrate severe toxicity from acute exposures. The LD<sub>50</sub>s for oral exposure to rabbits and

rats is 28 g/kg, while for guinea pigs it is 20 g/kg. Kerosene is not volatile enough to cause an acute inhalation hazard. Inhalation of high concentrations can cause headache and stupor. Ingestion can lead to irritation of the gastrointestinal tract, nausea and vomiting. In severe cases, exposure can cause depression of the central nervous system and drowsiness. When ingested material is aspirated, it can cause pulmonary edema and hemorrhaging. Kerosene's defatting action on the skin can cause irritation and dermatitis. While the TWA for kerosene is 100 mg/m<sup>3</sup>, the odor threshold is only 0.6 mg/m<sup>3</sup>.

Kerosene has a flash point of 100-165° F. The greatest environmental risk it presents is of fire.

#### Chromium

The chromate ion is commonly found in the trivalent (+3) and hexavalent (+6) forms. It is the hexavalent form which presents the greatest toxic risks. There are very few acute toxic effects from chromate VI. It can have a corrosive action on the skin and mucous membranes. Chromate is absorbed orally, mostly in organic complexes, through inhalation, and much less so through the skin. Chromate tends to persist in the body reaching its highest concentrations in the skin, lungs, muscle, and fat. Chromates also tend to bind to red blood cells.

The toxic effects from chronic exposure to chromate VI can be severe. It is a well documented carcinogen, and has been classified as such by the EPA Carcinogen Assessment Group. There is strong evidence of the carcinogenicity of chromate not

only from lab studies with animals, but also from epidemiological studies on human populations. Chromate VI is also a mutagen causing a variety of effects from mutations to chromosomal aberrations. These mutagenic effects have been documented in cellular and whole organisms. While there is some evidence indicating that chromate VI is a teratogen, this aspect of its toxicity has not been widely studied. The fact that chromate VI is readily transported across the placenta into the fetus leads to the suspicion that teratogenic effects can result from exposure. In addition to these properties, chronic exposure can also cause damage to the liver, kidneys, skin, and pulmonary system. Exposure to chromate containing fumes can cause an allergic dermatitis.

Chromates are very persistent in the environment. Chromate VI is relatively water soluble; however, in most waters it will reduce to Chromate III. Chromate III is less soluble and will tend to precipitate out or bind to organic matter in the system. The EPA limit for freshwater concentrations of chromate VI is 100 ug/l to protect aquatic life.

#### Lead

Lead is an EPA priority toxic pollutant and is a cumulative poison in all its forms. Lead is absorbed in the gastrointestinal tract or as aerosols in the lungs (where the absorption rate and efficiency depends on particle size). At high concentrations, lead can be absorbed through intact skin. Lead poisoning results from chronic exposure. Lead

bioaccumulates in organisms, so the effects of exposures are cumulative. In adults, 95 percent of the lead in the body is localized in the skeleton; the percentage is lower in children. Lead also tends to accumulate in red blood cells. Lead is suspected of causing cancer in the lungs and kidneys. It is a proven teratogen. Chronic toxicity from lead exposures shows up in effects on many systems. Lead can cause reproductive toxicity, kidney damage, cerebrovascular disease, cardiographic abnormalities, and impaired liver and thyroid function. Some of its most deleterious effects occur on the hematopoietic system, which is responsible for the production of blood cells. A range of neurobehavioral impairment effects have been shown to occur in children from exposures to lead.

In aquatic systems, lead does not move readily, since it forms insoluble sulfate and carbonate salts. The principal acute effect of lead on fish results from the formation of a film of coagulated mucus that appears over the entire body, and results in acute respiratory distress and death by suffocation. Lead is extremely persistent in environmental systems.

#### Summary

The risk of nonsudden environmental impairment due to the characteristics of the materials is high, due to the metals and PCBs. The risk of sudden impairment is moderate.

## Summary of Risk Evaluations

### Environmental Routes

Sudden - Low-to-Moderate  
Nonsudden - Moderate-to-High

### Target Populations

Sudden - Low-to-Moderate  
Nonsudden - Low-to-Moderate

### Facility Operations and Practices

Sudden - Moderate  
Nonsudden - Moderate

### Characteristics of Materials

Sudden - Moderate  
Nonsudden - High

### Overall Risk from the Facility

Sudden - Low-to-Moderate  
Nonsudden - Moderate-to-High

### Conclusions and Recommendations

McQuay-Norris, Inc., a subsidiary of SKF Industries, manufactures piston rings and other engine parts in a plant in St. Louis, Missouri. Rings are turned and bored in a machine shop, degreased with TCA, and plated with tin, chromium, or zinc phosphate. The overall risk of nonsudden environmental impairment is moderate-to-high, and the sudden risk is low-to-moderate.

Rinsewater from the plating operations is discharged to a sewer for treatment by a POTW. The rinsewater that is used immediately after chromium plating is part of a closed system and is not discharged. Violations of effluent limits for chromium and TCA have occurred, and the discharges generally have high concentrations of lead and other metals. In addition, PCBs have been detected in the chromium plating rinsewater sump.

There are four underground gasoline tanks, three abandoned and one active. The abandoned tanks have been found to be free of leaks, but the active tank has not been fully tested. Both wastewater sumps are apparently sound. There have been spills of kerosene and oil on the ground, possibly resulting in impairment to groundwater.

Emissions of chromic acid and other plating fumes are controlled by water rings. Metal particles generated in the machine shops are collected in baghouses. Emissions of combustion products and VOCs are minor.

The facility generates several hazardous wastes including

solvents, cyanides, and corrosive plating sludges and solutions. The wastes are treated and disposed of off-site.

The following recommendations, if implemented, could reduce the risks associated with this facility.

1. The company should develop methods for reducing the metal and solvent concentrations in discharged plating rinsewater. Chemical pretreatment might be necessary for metal removal, and steps might be needed to eliminate solvent residues between degreasing and plating.
2. The company should investigate whether PCBs are present in its wastewater discharges and, if so, determine and eliminate the source. Self-monitoring for PCBs is necessary.
3. Soil borings should be installed near the recently abandoned gasoline tank in order to determine whether it has leaked.

Appendix A - Wastewater monitoring report

METROPOLITAN ST. LOUIS SEWER DISTRICT  
INDUSTRIAL DATA SHEET

PAGE 1

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122483-00

WATERSHED DESIGNATION = LJM  
TREATMENT AREA = LEMAY  
TRUNK SEWER = JANUARY/HACKLIND

USER NAME = MCQUAY-NORRIS INC  
USER MAILING ADDRESS = 2320 MARCONI  
ST LOUIS MO 63110

QUESTIONNAIRE RECEIVED DATE = 2/17/81  
PREMISE ADDRESS = 2320 MARCONI  
ST LOUIS MO 63110

REVIEWER = WJS

ACCOUNT NAME = MC QUAY NORRIS MFG  
ACCOUNT MAILING ADDRESS = 2320 MARCONI AVE  
ST LOUIS MO 63110

CONTACT = THOMAS F. MOORE  
TITLE = DIR. OF QUALITY CONTROL  
TELEPHONE = 314-776-4880  
SICS = 3592\* 3471\* 3599\* 7538 4225

DAILY SHIFTS = 2  
DAYS PER WEEK = 5  
EMPLOYEES = 270

RAW MATERIALS = IRON,ALUMINUM,STEEL

PRODUCTS = PISTON RING & SEALING RINGS

INDUSTRIAL CATEGORY = 1 PRETREATMENT = WASTE DISPOSAL = X 2 INSP. DATE = 2/ 9/84 REINSP. DATE = 2/ 9/85  
COMMENTS = MODNR 01115,NO PRET,NO SPCCP,HAULED WSTE BOB'SHOME  
SERV&CHEM WST MGT&ELGINILL NELSON IND SERV DETROIT

SEWER ACCOUNT NUMBERS =

WATER CONSUMPTION (GPD) = 204,923 RETURN FACTOR = 1.00 WASTEWATER DISCHARGE (GPD) = 204,923 NPDES PERMIT NUMBER =

SURCHARGE BILLING VALUES (MG/L)  
SUSPENDED SOLIDS = BIOCHEMICAL OXYGEN DEMAND = CHEMICAL OXYGEN DEMAND = GREASE =

SEWER ROUTE = BLDG,W TO MARCONI,N TO MCREE,E TO TRUNK

ADJUSTED CATEGORICAL STANDARD INDICATORS =

POTENTIAL POLLUTANTS  
GENERAL POLLUTANTS

LBS/YR

COMMENTS

016 CYANIDE AMENABLE TO CHLORINATION =  
028 OIL AND GREASE (TOTAL) =  
041 TIN =

USED IN PLATING SOLUTIONS  
DEGREASERS  
TIN & NICKEL PLATING OPER INDICATED

PRIORITY POLLUTANTS

5,000

006 CADMIUM (TOTAL) =  
007 CHROMIUM (TOTAL) =  
008 COPPER (TOTAL) =  
009 LEAD (TOTAL) =  
011 NICKEL (TOTAL) =  
012 SELENIUM (TOTAL) =  
015 ZINC (TOTAL) =  
126 TRICHLOROETHENE =

INSPECTION INDICATED PRESENT  
.01 TO 2.0  
INSPECTION INDICATED PRESENT  
INSPECTION INDICATED PRESENT  
INDICATE PRESENT DURING INSPECTION  
INDICATED PRESENT DURING SITE INSPECTION  
INDICATED PRESENT DURING SITE INSPECTION  
TTO INDICATOR

PROHIBITED POLLUTANTS

001 SLUDGE SOLIDS FROM PRETREAT PROCESS (HAZARDOUS) =

OILS/GREASES

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122483-00

WATERSHED DESIGNATION = LJH  
TREATMENT AREA = LEHAY  
TRUNK SEWER = JANUARY/MACKLIND

PAGE 2

USER NAME = MCQUAY-NORRIS INC

010 COLOR OR TURBIDITY CAUSING SUBSTANCES =

OILS/GREASES

SEWER REFERENCE NUMBER 001

DESCRIPTION = MH 264' N OF SW BLOC 2A CORNER SIDEWALK 7' W AT ELZ HPOES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 172,135 DISCHARGE FACTOR = .84 SPLIT SAMPLE WITH COMPANY =  
ALTERNATIVE CONCENTRATION LIMIT COMMENTS =

LABORATORY ANALYSIS OF WASTEWATER

GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)

		MSD 10/29/84 1300	MSD 7/19/84 1410	MSD 5/10/84 1315	MSD 3/15/84 1035
	STANDARD	LOG 01808	LOG 00289	LOG 06318	LOG 05066
006 BIOCHEMICAL OXYGEN DEMAND (5 DAY) =	H/I	300			
011 CHEMICAL OXYGEN DEMAND =	H/I	600	90	35	270
016 CYANIDE AMENABLE TO CHLORINATION =	H/I	2			100
028 OIL AND GREASE (TOTAL) =	H/I	100			
030 PH ACIDIC (UNITS) LESS THAN 7 =	H/I	5.5			
031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =	H/I	10.5	8.4	8.9	9.2
040 TEMPERATURE (DEGREES C) =	H/I	65		37	25
044 TOTAL SOLIDS =	H/I		403		734
045 TOTAL DISSOLVED SOLIDS =	H/I		381		611
049 TOTAL SUSPENDED SOLIDS =	H/I	350	22	22	40
050 TURBIDITY (NTU) =	H/I				123
053 VOLATILE SUSPENDED SOLIDS =	H/I		6		19

PRIORITY POLLUTANTS (MG/L)

002 CYANIDE (TOTAL) =	H/I	10	.1	L	.1	L	.1
006 CADMIUM (TOTAL) =	AVG	.1					
008 CADMIUM (TOTAL) =	H/I	.3	.04	L	.01	.01	.01
007 CHROMIUM (TOTAL) =	AVG	5					
007 CHROMIUM (TOTAL) =	H/I	15	.03		.05	.02	.01
008 COPPER (TOTAL) =	AVG	1.5					
008 COPPER (TOTAL) =	H/I	4.5	.01	L	.01	.01	.01
009 LEAD (TOTAL) =	AVG	.2					
009 LEAD (TOTAL) =	H/I	.6	L	.1	L	.01	.3
011 NICKEL (TOTAL) =	AVG	2					
011 NICKEL (TOTAL) =	H/I	6	.07		.03	L	.01
012 SELENIUM (TOTAL) =	AVG	.2					
012 SELENIUM (TOTAL) =	H/I	.6	L	.01	L	.01	L
015 ZINC (TOTAL) =	AVG	3					
015 ZINC (TOTAL) =	H/I	9			.11		.1
124 1,1,1 - TRICHLOROETHANE =	H/I	.003H	L	.001			
126 TRICHLOROETHENE =	H/I	.001I		.383 W	L	.001	

PROHIBITED POLLUTANTS  
NONE

INDUSTRIAL WASTE PROGRAM JAR010.01  
 RUN 11/15/84 TIME 1951  
 MSD ACCOUNT NUMBER = 41122483-00

PAGE 3

WATERSHED DESIGNATION = LJM  
 TREATMENT AREA = LEHAY  
 TRUNK SEWER = JANUARY/MACKLIND

USER NAME = MCQUAY-NORRIS INC

SEWER REFERENCE NUMBER 002

DESCRIPTION = 8" VENT 117' N. OF SP#1 SIDEWALK 7' W

NPDES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 14,344 DISCHARGE FACTOR = .07  
 ALTERNATIVE CONCENTRATION LIMIT COMMENTS = ELECT & MF PRET. SP. PT.

SPLIT SAMPLE WITH COMPANY =

# LABORATORY ANALYSIS OF WASTEWATER

## GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)

011 CHEMICAL OXYGEN DEMAND =

030 PH ACIDIC (UNITS) LESS THAN 7 =

031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =

040 TEMPERATURE (DEGREES C) =

044 TOTAL SOLIDS =

045 TOTAL DISSOLVED SOLIDS =

049 TOTAL SUSPENDED SOLIDS =

053 VOLATILE SUSPENDED SOLIDS =

## PRIORITY POLLUTANTS (MG/L)

002 CYANIDE (TOTAL) =

002 CYANIDE (TOTAL) =

006 CADMIUM (TOTAL) =

006 CADMIUM (TOTAL) =

007 CHROMIUM (TOTAL) =

007 CHROMIUM (TOTAL) =

008 COPPER (TOTAL) =

008 COPPER (TOTAL) =

009 LEAD (TOTAL) =

009 LEAD (TOTAL) =

011 NICKEL (TOTAL) =

011 NICKEL (TOTAL) =

012 SELENIUM (TOTAL) =

012 SELENIUM (TOTAL) =

013 SILVER (TOTAL) =

013 SILVER (TOTAL) =

015 ZINC (TOTAL) =

015 ZINC (TOTAL) =

124 1,1,1 - TRICHLOROETHANE =

126 TRICHLOROETHENE =

## PROHIBITED POLLUTANTS

NONE

		MSD-A		MSD-A		MSD-A		MSD-A
		10/29/84		7/19/84		5/10/84		3/15/84
		1320		1425		1335		1050
STANDARD-A	LOG	01802	LOG	00290	LOG	06319	LOG	05067
M/I			55		80		220	
M/I	5.5							
M/I	10.5	8.4	8		8.5		7.2	
M/I	65		33		23		19	
M/I							742	
M/I							615	
M/I			95		168		127	
M/I							29	
AVG	1							
M/I	1.9	L	.1	L	.1	L	.1	
AVG	.7							
M/I	1.2	L	.01	L	.01		.01	.01
AVG	4							
M/I	7		.07		.32	.25		3.78
AVG	2.7							
M/I	4.5		.01	L	.01	.03		.03
AVG	.4							
M/I	.6	L	.1		.1	.3		.2
AVG	2.6							
M/I	4.1		.58		.71	1.4		2.19
AVG	.2							
M/I			L	.01	L	.01		.01
AVG	.7							
M/I	1.2							
AVG	2.6							
M/I	4.2		.08		.2			.11
M/I	.003H		(.26 V		2.625 V			
M/I	.0011		(.16 V		.591 V			

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122493-00

WATERSHED DESIGNATION = LJM  
TREATMENT AREA = LEHAY  
TRUNK SEWER = JANUARY/MACKLIND

PAGE 4

USER NAME = MCQUAY-NORRIS INC

SEWER REFERENCE NUMBER 003

DESCRIPTION = INSIDE BLDG 23-FLOOR SUMP PLATING ROOM NW WALL NPDES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 12,295 DISCHARGE FACTOR = .06 SPLIT SAMPLE WITH COMPANY =  
ALTERNATIVE CONCENTRATION LIMIT COMMENTS = ELECT & HF PRET. SP. PT.

LABORATORY ANALYSIS OF WASTEWATER

		MSD-A 10/29/84 1405	MSD-A 8/ 2/84 1025	MSD-A 5/10/84 1420	MSD-A 3/15/84 1145
GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)		LOG 01810	LOG 00491	LOG 00320	LOG 05068
011 CHEMICAL OXYGEN DEMAND =	M/I	20	20	20	20
030 PH ACIDIC (UNITS) LESS THAN 7 =	M/I	5.5			
031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =	M/I	10.5	8.5	8.2	9.5
040 TEMPERATURE (DEGREES C) =	M/I	65		30	21
044 TOTAL SOLIDS =	M/I		360		12
045 TOTAL DISSOLVED SOLIDS =	M/I		353		275
049 TOTAL SUSPENDED SOLIDS =	M/I		7	12	62
053 VOLATILE SUSPENDED SOLIDS =	M/I		1		16
PRIORITY POLLUTANTS (MG/L)					
002 CYANIDE (TOTAL) =	AVG	1			
002 CYANIDE (TOTAL) =	M/I	1.9	L	.1	.1
006 CADMIUM (TOTAL) =	AVG	.7			
006 CADMIUM (TOTAL) =	M/I	1.2		.01	.01
007 CHROMIUM (TOTAL) =	AVG	4			
007 CHROMIUM (TOTAL) =	M/I	7	3.88	1.15	16
008 COPPER (TOTAL) =	AVG	2.7			
008 COPPER (TOTAL) =	M/I	4.5	.1	.08	.41
009 LEAD (TOTAL) =	AVG	.4			
009 LEAD (TOTAL) =	M/I	.6	.2	.5	.3
011 NICKEL (TOTAL) =	AVG	2.6			
011 NICKEL (TOTAL) =	M/I	4.1	.02	.01	.03
012 SELENIUM (TOTAL) =	AVG	.2			
012 SELENIUM (TOTAL) =	M/I		.01	.01	.01
013 SILVER (TOTAL) =	AVG	.7			
013 SILVER (TOTAL) =	M/I	1.2	.01		
015 ZINC (TOTAL) =	AVG	2.6			
015 ZINC (TOTAL) =	M/I	4.2	.16		.09
107 PCB - 1016 =	M/I		L	.1	
111 PCB - 1248 =	M/I		L	.01	
112 PCB - 1254 =	M/I			3.67	
113 PCB - 1260 =	M/I			.07	
114 PENTACHLOROPHENOL =	M/I		L	.1	
116 PHENOL =	M/I			.18	
120 TETRACHLOROETHENE =	M/I			.07	
124 1,1,1 - TRICHLOROETHANE =	M/I	.003H	L	.001	
126 TRICHLOROETHENE =	M/I	.001I	L	.001	

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122483-00

WATERSHED DESIGNATION = LJM  
TREATMENT AREA = LFMAY  
TRUNK SEWER = JANUARY/MACKLIND

PAGE 5

USER NAME = MCQUAY-NORRIS INC

PROHIBITED POLLUTANTS

NONE

SEWER REFERENCE NUMBER 004

DESCRIPTION = 6" VENT 240' N OF SP#2 SIDEWALK 7' W AT TREE

UPDES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 2,049

DISCHARGE FACTOR = .01

SPLIT SAMPLE WITH COMPANY =

ALTERNATIVE CONCENTRATION LIMIT COMMENTS =

LABORATORY ANALYSIS OF WASTEWATER

GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)

006 BIOCHEMICAL OXYGEN DEMAND (5 DAY) =

011 CHEMICAL OXYGEN DEMAND =

016 CYANIDE AMENABLE TO CHLORINATION =

028 OIL AND GREASE (TOTAL) =

030 PH ACIDIC (UNITS) LESS THAN 7 =

031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =

040 TEMPERATURE (DEGREES C) =

044 TOTAL SOLIDS =

045 TOTAL DISSOLVED SOLIDS =

049 TOTAL SUSPENDED SOLIDS =

053 VOLATILE SUSPENDED SOLIDS =

PRIORITY POLLUTANTS (MG/L)

002 CYANIDE (TOTAL) =

006 CADMIUM (TOTAL) =

006 CADMIUM (TOTAL) =

007 CHROMIUM (TOTAL) =

007 CHROMIUM (TOTAL) =

008 COPPER (TOTAL) =

008 COPPER (TOTAL) =

009 LEAD (TOTAL) =

009 LEAD (TOTAL) =

011 NICKEL (TOTAL) =

011 NICKEL (TOTAL) =

012 SELENIUM (TOTAL) =

012 SELENIUM (TOTAL) =

015 ZINC (TOTAL) =

015 ZINC (TOTAL) =

124 1,1,1 - TRICHLOROETHANE =

126 TRICHLOROETHENE =

PROHIBITED POLLUTANTS

NONE

		MSD 10/29/84 1340	MSD 7/19/84 1440	MSD 5/10/84 1400	MSD 3/15/84 1110
	STANDARD	LOG 01811	LOG 00291	LOG 06321	LOG 05069
M/I	300				
M/I	600	425	70	65	435
M/I	2				
M/I	100				
M/I	5.5				
M/I	10.5	8.5	8.6	9.4	9.1
M/I	65		41	35	20
M/I		1620			1750
M/I		624			1322
M/I	350	996 V	134	46	428 V
M/I		358			98
M/I	10	L .1	L .1	L .1	
AVG	.1				
M/I	.3	L .01	L .01	L .01	.02
AVG	5				
M/I	15	.03	.02	.02	L .01
AVG	1.5				
M/I	4.5	.19	L .01	.02	.08
AVG	.2				
M/I	.6	.9 V	.01	.2	.7 V
AVG	.2				
M/I	6	L .01	.03	L .01	.04
AVG	.2				
M/I	.6	L .01	L .01	L .01	.02
AVG	3				
M/I	9	1.77	.12		.39
M/I	.003H	L .001			
M/I	.001I	L .001	L .001		

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122483-00

WATERSHED DESIGNATION = LJM  
TREATMENT AREA = LEMAY  
TRUNK SEWER = JANUARY/MACKLIND

PAGE 6

USER NAME = MCQUAY-NORRIS INC

SEWER REFERENCE NUMBER 005

DESCRIPTION = MH 6' E 6' N OF NE CORNER BLDG #23 AT FENCE

NPDES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 2,049

DISCHARGE FACTOR = .01

SPLIT SAMPLE WITH COMPANY =

ALTERNATIVE CONCENTRATION LIMIT COMMENTS =

LABORATORY ANALYSIS OF WASTEWATER

GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)

		MSD 10/29/84 1435	MSD 5/10/84 1450	MSD 3/15/84 1200	MSD 12/22/83 1120
006 BIOCHEMICAL OXYGEN DEMAND (5 DAY) =	M/I	300			
011 CHEMICAL OXYGEN DEMAND =	M/I	600	35	25	90
013 CYANIDE AMENABLE TO CHLORINATION =	M/I	2			
028 OIL AND GREASE (TOTAL) =	M/I	100			
030 PH ACIDIC (UNITS) LESS THAN 7 =	M/I	5.5			8.8
031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =	M/I	10.5	8	9.3	9.4
040 TEMPERATURE (DEGREES C) =	M/I	65		21	15
044 TOTAL SOLIDS =	M/I				10
045 TOTAL DISSOLVED SOLIDS =	M/I			354	
049 TOTAL SUSPENDED SOLIDS =	M/I			310	
053 VOLATILE SUSPENDED SOLIDS =	M/I	350	25	16	44
			11		23
				11	

PRIORITY POLLUTANTS (MG/L)

		MSD 10/29/84 1435	MSD 5/10/84 1450	MSD 3/15/84 1200	MSD 12/22/83 1120
002 CYANIDE (TOTAL) =	M/I	10	L .1	L .1	
006 CADMIUM (TOTAL) =	AVG	.1			
006 CADMIUM (TOTAL) =	M/I	.3	.03	L .01	L .01
007 CHROMIUM (TOTAL) =	AVG	5			
007 CHROMIUM (TOTAL) =	M/I	15	2.81	1.35	6.26
008 COPPER (TOTAL) =	AVG	1.5			
008 COPPER (TOTAL) =	M/I	4.5	.09	.1	.19
009 LEAD (TOTAL) =	AVG	.2			.07
009 LEAD (TOTAL) =	M/I	.6	.1	.2	.3
011 NICKEL (TOTAL) =	AVG	2			L .01
011 NICKEL (TOTAL) =	M/I	6	.06	.02	.04
012 SELENIUM (TOTAL) =	AVG	.2			L .01
012 SELENIUM (TOTAL) =	M/I	.6	L .01	L .01	L .01
015 ZINC (TOTAL) =	AVG	3			
015 ZINC (TOTAL) =	M/I	9	.07		.07
124 1,1,1 - TRICHLOROETHANE =	M/I	.003M	L .001		
126 TRICHLOROETHENE =	M/I	.0011			

PROHIBITED POLLUTANTS

NONE

INDUSTRIAL WASTE PROGRAM JAR010.01  
RUN 11/15/84 TIME 1951  
MSD ACCOUNT NUMBER = 41122483-00

WATERSHED DESIGNATION = LJM  
TREATMENT AREA = LEMAY  
TRUNK SEWER = JANUARY/HACKLIND

PAGE 7

USER NAME = MCQUAY-NORRIS INC

SEWER REFERENCE NUMBER 006

DESCRIPTION = 6" VENT AT FENCE GATE N OF BLDG 28 E OF BLDG 7 MPDES OUTFALL NUMBER =

AVERAGE WASTEWATER DISCHARGE (GPD) = 2,049 DISCHARGE FACTOR = .01 SPLIT SAMPLE WITH COMPANY =  
ALTERNATIVE CONCENTRATION LIMIT COMMENTS =

LABORATORY ANALYSIS OF WASTEWATER

GENERAL POLLUTANTS (MG/L EXCEPT AS NOTED)

001 ACIDITY (AS  $\text{CaCO}_3$ ) =

M/I 23

002 ALKALINITY (AS  $\text{CaCO}_3$ ) =

M/I 148

006 BIOCHEMICAL OXYGEN DEMAND (5 DAY) =

M/I 300

011 CHEMICAL OXYGEN DEMAND =

M/I 600 460

016 CYANIDE AMENABLE TO CHLORINATION =

M/I 2

028 OIL AND GREASE (TOTAL) =

M/I 100 47

030 PH ACIDIC (UNITS) LESS THAN 7 =

M/I 5.5

031 PH BASIC (UNITS) GREATER THAN OR EQUAL TO 7 =

M/I 10.5 7.2

040 TEMPERATURE (DEGREES C) =

M/I 65

044 TOTAL SOLIDS =

M/I 918

045 TOTAL DISSOLVED SOLIDS =

M/I 674

049 TOTAL SUSPENDED SOLIDS =

M/I 350 244

053 VOLATILE SUSPENDED SOLIDS =

M/I 222

PRIORITY POLLUTANTS (MG/L)

002 CYANIDE (TOTAL) =

M/I 10 L .1

006 CADMIUM (TOTAL) =

AVG .1

006 CADMIUM (TOTAL) =

M/I .3

007 CHROMIUM (TOTAL) =

AVG 5

007 CHROMIUM (TOTAL) =

M/I 15 1.43

008 COPPER (TOTAL) =

AVG 1.5

008 COPPER (TOTAL) =

M/I 4.5

009 LEAD (TOTAL) =

AVG 1.2

009 LEAD (TOTAL) =

M/I .6 .15

011 NICKEL (TOTAL) =

AVG 2

011 NICKEL (TOTAL) =

M/I 6

012 SELENIUM (TOTAL) =

AVG .2

012 SELENIUM (TOTAL) =

M/I .6

015 ZINC (TOTAL) =

AVG 3

015 ZINC (TOTAL) =

M/I 9

124 1,1,1 - TRICHLOROETHANE =

M/I .003H

126 TRICHLOROETHENE =

M/I .0011

PROHIBITED POLLUTANTS

NONE

Appendix B - Hazardous waste shipments

<u>Date Shipped</u>	<u>Material</u>	<u>Class</u>	<u>EPA #</u>	<u>Mo. Waste ID No.</u>	<u>Qty.</u>	<u>Vendor</u>	<u>Shipped To</u>	<u>Manifest #</u>
6/27/81	Trichlorethylene Waste	Toxic	F-001	001	9600 # 6-55 gal. drums.	McKesson Chemical St. Louis, MO	Waste Research & Reclamation Eau Claire, WI	01115-001
6/30/81	Waste Sulfuric Acid Waste Cyanide Solution	Corrosive Poison B	F-009 F-009	004 006	110 Gal. 55 Gal.	Environmental Emergency Service Chesterfield, MO	Nelson Industrial Service, Detroit, MI	01115-002
5/18/82	Parko Lubrize Waste		D-006	001	1085 Gal. 17-55 Gal. Drums 5-30 Gal. Drums	Bob's Home Service Wright City, MO	Bob's Home Service Wright City,, MO	01115-003
5/19/82	Chlorathane Waste	Flammable Toxic	F-001	002	11,900 # 17-55 Gal. Drums	Chemical Waste Management ALSIP, IL	Chemical Waste Management Joliet, IL	01115-004
2/25/83	Parko Lubrize Waste		D-006	001	660 Gal. 12-55 Gal. Drums	Bob's Home Service Wright City, MO	Bob's Home Service Wright City, MO	01115-005
3/24/83	Trichlorothylene Waste	Toxic	F-001	002	6300 # 9-55 Gal. Drums	Clayton Chemical Sauget, IL Via Schiber Truck Lines Hartford, IL	Clayton Chemical Sauget, IL	01115-006
9/20/83	Parko Lubrize Waste		D-006	001	550 Gal. 10-55 Gal. Drums	Bob's Home Service Wright City, MO	Bob's Home Service Wright City, MO	01115-007
10/27/83	Waste Chromic Acid Solid Waste Corrosive Liquid Waste Sulfuric Acid Solution			003 003 004	8-55 Gal. Dr. 16-55 Gal. Dr. 2-55 Gal. Dr.	ILWD Indianapolis Via Indiana Liquid Transport, Columbus, IN	ILWD, Indianapolis IN	01115-008
10/27/83	Waste Cyanide Solution Waste Sodium Cyanide Solution Waste Cyanide Solution			006 006 006	2-55 Gal. Dr. 1-55 Gal. Dr. 1-55 Gal. Dr.	Environmental Emergency Service Chesterfield, MO	ILWD Indianapolis IN.	01115-009
12/23/83	Sodium Cyanide Acetone			006 007	2-55 Gal. Dr. 2-55 Gal Dr.	ILWD, Indianapolis, IN Via Indiana Liquid Transport	ILWD Indianapolis IN	01115-010
3/16/84	Parko-Lubrize Waste		D-006	001	330 Gal. 6-55 Gal. Dr.	Bob's Home Service Wright City, MO	Bob's Home Service Wright City, MO	01115-011
5/8/84	Parko-Lubrize Waste		D-006	001	275 Gal. 5-55 Gal. Dr.	Bob's Home Service Wright City, MO	Bob's Home Service Wright City, MO	01115-012
8/20/84	Parko-Lubrize Waste		D-006	001	440 Gal. 8-55 Gal. Dr.	Bob's Home Service Wright City, MO	Bob's Home Service Wright City, MO	01115-013
10/22/84	Waste Cyanide Liquid Waste Cyanide Sludge		UN-1935	006 006	330 Gal. 110 Gal.	ILWD, Indianapolis, IN Via Indiana Liquid Transport	ILWD Indianapolis, IN	01115-0014
1/16/85	Trichlorothene Waste	Toxic	F001	008	1000 Gal. Bulk	Clayton Chemical Sauget, IL Via Schiber Truck Lines Hartford, IL	Clayton Chemical Sauget, IL	01115-015

Appendix C - Air emission inventory

DATE SUBMITTED 10/1/85  
MISSOURI DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF ENVIRONMENTAL QUALITY  
AIR POLLUTION CONTROL PROGRAM  
P.O. BOX 1368  
JEFFERSON CITY, MISSOURI 65102

## Emissions Inventory Questionnaire (EIQ)

### SECTION I - GENERAL INFORMATION

SICC 3714

FACILITY NAME McQuay-Norris		PRINCIPAL ACTIVITY AND PRODUCTS MANUFACTURED Piston Ring Manufacturing	
FACILITY LOCATION ADDRESS 2320 Marconi Avenue		COUNTY St. Louis	
FACILITY MAILING ADDRESS St. Louis, Missouri 63110			
FACILITY CONTACT PERSON K. Lerch		POSITION Industrial Engineer/Environmental Spec.	TELEPHONE NUMBER 314 776 4800
PARENT COMPANY NAME SKF Industries, Inc.		PARENT COMPANY MAILING ADDRESS 1100 First Avenue, King of Prussia, PA 19406	
PARENT COMPANY CONTACT PERSON J. S. Stromske		POSITION Environmental Specialist	TELEPHONE NUMBER 314 776 4800
CALENDAR YEAR OF RECORD 04-01-18	LAND IN ACRES 9.769	ELEVATION ABOVE MEAN SEA LEVEL 346 feet	NUMBER OF EMPLOYEES 100
UTM COORDINATES HORIZONTAL _____ KM VERTICAL _____ KM		LATITUDE AND LONGITUDE COORDINATES NORTH LATITUDE 38 DEG. 36 MIN. 28 SEC. WEST LONGITUDE 90 DEG. 16 MIN. 10 SEC.	CTSR COORDINATES TOWNSHIP _____ SECTION _____ RANGE _____
NAME OF PERSON COMPLETING QUESTIONNAIRE James S. Stromske		SIGNATURE	DATE 10/1/85

## SECTION III - TOTAL FUEL CONSUMPTION INFORMATION

FACILITY NAME McQuay-Norris

INSTRUCTIONS: Summarize below the Total ANNUAL fuel Consumption at your Facility.  
Use appropriate fuel units listed below.

TYPE OF UNIT	Natural Gas (Millions of CFT/YR)	LPG (GAL/YR)	COAL			OTHER FUEL (Specify)		
			TCH/YR	% Sul	% Ash	QUANTITY	UNITS	% SULFUR
SPACE HEATING								
PROCESS HEATERS	3,194,600							
BOILERS	30,210,400							
STATIONARY GAS ENGINES								
GAS TURBINES								
OTHER (Specify) Forklifts		3514						
TOTALS CONSUMED	33,405,000	3514						

## SECTION IX - AIR POLLUTION CONTROL DEVICE INFORMATION

INSTRUCTIONS: LIST ALL INFORMATION PERTAINING TO AIR POLLUTION CONTROL DEVICES USED IN YOUR FACILITY. USE THE SAME ID NUMBERS OR CODES WHICH ARE USED IN THE PLANT DIAGRAMS AND INFORMATION SHEETS THROUGHOUT THIS QUESTIONNAIRE. IF POSSIBLE, INCLUDE MANUFACTURER'S LITERATURE CONTAINING DEVICE DESCRIPTIONS AND SPECIFICATIONS.

## AIR POLLUTION CONTROL DEVICE DATA

CONTROL DEVICE ID NUMBER OR CODE	POLLUTION CONTROL DEVICE		POLLUTANT REMOVED	PERCENT EFFICIENCY		DATE EQUIPMENT BEGAN OPERATING
	TYPE	BRAND NAME AND MODEL NO.		DESIGN	ACTUAL	
CD 1	Vacuum Bag	Spencer	Particulates	99.9	99.7	1979
CD 2	Vacuum Bag	Spencer	Particulates	99.9	99.7	1979
CD 3	Vacuum Bag	Spencer	Particulates	99.9	99.7	1979
CD 4	Bag	Sly	Particulates	99.9	99.5	1956
CD 5	Bag	Sly	Particulates	99.9	99.5	1947
CD 6	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945
CD 7	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945
CD 8	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945
CD 9	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945
CD 10	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945
CD 11	Water Ring	Biforcator	Chrome Vapor	99.9	99.7	1945

COPY ADDITIONAL PAGES AS NEEDED

## Section X — Stack or Vent Emission Point Information

Instructions: Complete a separate "stack or vent emission point information" for each emission point of your facility which emits pollutants to the atmosphere from a stack or equipment vent. Other emissions which do not emit from a stack or vent are considered fugitive emissions (such as conveying, loading, stockpiling, etc.).

List the following coordinates for the emission point location:

Latitude-Longitude Coordinates

N. Lat. 38 Deg: 36 Min: 28 Sec

W. Long. 90 Deg: 16 Min: 10 Sec

U.T.M. Coordinates

Horizontal \_\_\_\_\_ KM

(If known)

Vertical \_\_\_\_\_ KM

EMISSION POINT I.D. #	PROCESS I.D. #	POLLUTION CONTROL DEVICE I.D. #	EMISSION POINT DESCRIPTION	STACK SHAPE <input type="checkbox"/> or <input type="checkbox"/>	STACK CROSS SECT. AREA (FT <sup>2</sup> )	HEIGHT OF STACK TOP ABOVE GRADE (FT)	EXIT GAS TEMP. (F)	EXIT GAS EXIT FLOW RATE		NORMAL EXIT GAS VELOCITY (FT/MIN)
								ACTUAL (CFM)	MAX (CFM)	
EP 1	MP 1	None	Suction Blower	<input type="checkbox"/>	6	35	Amb.	18,000	18,000	500
EP 2	N/A	None	Boiler Stack	<input type="checkbox"/>	4	32	213°F	1,600	1,600	400
EP 3	N/A	None	Forced Air	<input type="checkbox"/>	1	29'6"	Amb.	1,100	1,100	1,100
EP 4	MP 3	CD 1	Forced Air	<input type="checkbox"/>	2	12	Amb	850	850	425
EP 5		CD 2		<input type="checkbox"/>	2	12				
EP 6	MP 3	CD 3	Forced Air	<input type="checkbox"/>	2	12	Amb	850	850	425
EP 7		CD 7		<input type="checkbox"/>	1.6					
EP 8	MP 4	CD 8	Vent	<input type="checkbox"/>	1.6	25	Amb	960	960	600
EP 9		CD 9		<input type="checkbox"/>	1.6					
EP 10	MP 4	CD 10	Vent	<input type="checkbox"/>	1.6	25	Amb	960	960	600
EP 11		CD 11		<input type="checkbox"/>	1.6					
EP 12	MP 4	CD 12	Vent	<input type="checkbox"/>	1.6	25	Amb	960	960	600
EP 13	N/A	None	Boiler Stack	<input type="checkbox"/>	1	40	213°F	400	400	400
EP 14	N/A	None	Boiler Stack	<input type="checkbox"/>	18	70	213°F	7,200	7,200	400
EP 15	MP 3	CD 4	Forced Vent	<input type="checkbox"/>	6	15	Amb	24,000	24,000	4,000
EP 16	MP 3	CD 5	Forced Vent	<input type="checkbox"/>	6	15	Amb	42,000	42,000	7,000

E: List all multiple emission points I.D.#s associated with each stack.

Exit Gas Flow Rate (ft<sup>3</sup>/min)

## SECTION XI - EMISSION CHECKLIST

FACILITY NAME

McQuay-Norris

INSTRUCTIONS: LIST THE CORRESPONDING ID NUMBERS OR CODES FOR EMISSION POINTS FROM WHICH ANY OF THE FOLLOWING ELEMENTS OR COMPOUNDS ARE EMITTED TO THE ATMOSPHERE AS A RESULT OF A MANUFACTURING, HANDLING OR FUEL COMBUSTION PROCESS OR A FUGITIVE LOSS. USE THE SAME EMISSION POINT ID NUMBERS OR CODES WHICH ARE USED IN THE PLANT DIAGRAMS AND INFORMATION SHEETS THROUGHOUT THE QUESTIONNAIRE. INCLUDE EMISSIONS DATA FOR THESE ELEMENTS OR COMPOUNDS IN SECTION XII - EMISSIONS INFORMATION.

ELEMENTS	COMPOUNDS (CONTINUED)	COMPOUND OR ELEMENT (Specify)	EMISSION POINT ID NO. OR CODE
ANTIMONY	DIOXIN	Chromic Acid	EP 7, EP8 - EP 9
ARSENIC	EPICHLOROHYDRIN		
BARIUM	ETHYLENE DIBROMIDE		
BERYLLIUM	ETHYLENE DICHLORIDE		
BORON	ETHYLENE OXIDE		EP 10 - EP 11 - EP 12
BROMINE	FORMALDEHYDE		
CADMIUM	HEXACHLOROCYCLOHEPTADIENE		
CHLORINE	HYDROCHLORIC ACID		
CHROMIUM	MALEIC ANHYDRIDE		
COPPER	METHYL CHLOROPHOSPHATE		
FLUORINE	METHYLENE CHLORIDE		
IODINE	METHYL IODIDE		
LEAD	NITRIC ACID		
MANGANESE	NITROBENZENE		
MERCURY	2-NITROPROPANE		
MOLYBDENUM	N-NITROSODIETHYLAMINE		
NICKEL	NITROSOETHYLUREA		
SELENIUM	NITROSOMETHYLUREA		
TELLURIUM	NITROSOMETHYLENE		
THALLIUM	PERCHLOROETHYLENE		
TIN	PHENOL		
VANADIUM	PHOSGENE		
ZINC	POLYCHLORINATED BIPHENYLS		
NOBLE METALS (SPECIFY)	PROPYLENE OXIDE		
RARE EARTHS (SPECIFY)	TOLUENE		
OTHER HEAVY METALS (SPECIFY)	OZONE		
OTHER (SPECIFY)	PHOSPHORIC ACID		
	TALC		
	TRICHLOROETHYLENE		
	VINYLDENE CHLORIDE		
	O-,M-,P-XYLENE		
COMPOUNDS	GENERAL COMPOUNDS (SPECIFY)		
ACETALDEHYDE	AMMONIA COMPOUNDS		
ACROLEIN	ALDEHYDES		
ACRYLONITRILE	CARDONYLS		
ALLYL CHLORIDE	CYANIDE COMPOUNDS		
ASBESTOS	DISULFIDES		
BENZENE	HALOGENATED HYDROCARBONS		
BENZYL CHLORIDE	HERBICIDES		
BIS (CHLOROMETHYL) ETHER	MERCAPTANS		
CARBON TETRACHLORIDE	ORGANIC PHOSPHATES		
CHLOROBENZENE	PESTICIDES		
CHLOROFORM	SULFIDES		
CHLOROMETHYLMETHYL ETHER	VOLATILE ORGANIC SOLVENTS		
CHLOROPRENE	OTHER (SPECIFY)		
CHROMIC ACID			
O-,M-,P-CRESOL			
P-DICHLOROBENZENE			
DIMETHYL NITROSAMINE			
DIOXANE			

## SECTION XII — EMISSIONS INFORMATION

APPLICABLE BYES UNO

FACILITY NAME McQuay-Norris

Instructions: List emissions information in tons per year for the calendar year reported. Use one line of the table below for each emission point from which pollutants are emitted to the atmosphere. Be sure to include fugitive emission points such as conveyors, open loading dumps, stockpiles, unpaved roads, unpaved parking lots, etc. Use the same emission point I.D. numbers or codes

which are used in the plant diagrams and information sheets throughout this questionnaire. Copy additional pages as needed. Show subtotals of emissions for each page and overall totals of emissions on the final page. If emissions estimates are unknown for an emission point, list emission point I.D. number or code, type emission and "X" in pollutant column.

TYPE OF EMISSION POINT — CODE: (use this code in column 2 of the table below) 1 = Stack 2 = Vent 3 = Elevated Flare 4 = Ground Flare 5 = Open Dump 6 = Incinerator 7 = Fugitive 8 = Tank	CALCULATION METHOD FOR EMISSIONS — CODE: (use this code in column 3 of the table below) A = Stack Test (attach) B = Material Balance C = EPA Emission Factor D = Other Emission Factor E = Estimate F = Other (specify)
--	---

List all Emissions from each Emission Point for the Calendar year in Tons/yr.

NOTE: Specify chemical composition of acids and other emissions

EMISSION POINT I.D.#	TYPE OF EMISSION CODE	CALC. METHOD CODE	PARTICULATES (TSP)	SULFUR DIOXIDE (SO <sub>2</sub> )	NITROGEN OXIDES (NO <sub>x</sub> )	VOLATILE ORGANIC COMPOUNDS (VOCs)	CARBON MONOXIDE (CO)	ACID MISTS (specify)	LEAD (pb)	OTHERS (specify)
EP 1	2	E	0.000	N/A	N/A	N/A	N/A	N/A	N/A	
EP 2	1	E	0.000	N/A	N/A	N/A	N/A	N/A	N/A	
EP 3	2	B	0.500	N/A	N/A	N/A	N/A	N/A	N/A	
EP 4	2	B	0.150	N/A	N/A	N/A	N/A	N/A	N/A	
EP 5	2	B	0.150	N/A	N/A	N/A	N/A	N/A	N/A	
EP 6	2	B	0.150	N/A	N/A	N/A	N/A	N/A	N/A	
EP 7	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	
EP 8	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	
EP 9	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	
EP 10	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	

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Missouri Department of Natural Resources' Air Pollution Control Program

FACILITY NAME McQuay-Norris

Instructions: List emissions information in tons per year for the calendar year reported. Use one line of the table below for each emission point from which pollutants are emitted to the atmosphere. Be sure to include fugitive emission points such as conveyors, open loading dumps, stockpiles, unpaved roads, unpaved parking lots, etc. Use the same emission point I.D. numbers or codes

which are used in the plant diagrams and information sheets throughout this questionnaire. Copy additional pages as needed. Show subtotals of emissions for each page and overall totals of emissions on the final page. If emissions estimates are unknown for an emission point, list emission point I.D. number or code, type emission and "X" in pollutant column.

TYPE OF EMISSION POINT - CODE:  
(use this code in column 2  
of the table below)

1 = Stack  
2 = Vent  
3 = Elevated Flare  
4 = Ground Flare

5 = Open Dump  
6 = Incinerator  
7 = Fugitive  
8 = Tank

CALCULATION METHOD FOR EMISSIONS - CODE:  
(use this code in column 3  
of the table below)

A = Stack Test (attach)  
B = Material Balance  
C = EPA Emission Factor

D = Other Emission Factor  
E = Estimate  
F = Other (specify)

List all Emissions from each Emission Point for the Calendar year in Tons/yr.

NOTE: Specify chemical composition of acids and other emissions

EMISSION POINT I.D.#	TYPE OF EMISSION CODE	CALC. METHOD CODE	PARTICU- LATES (TSP)	SULFUR DIOXIDE (SO <sub>2</sub> )	NITROGEN OXIDES (NO <sub>x</sub> )	VOLATILE ORGANIC COMPOUNDS (VOCs)	CARBON MONOXIDE (CO)	ACID MISTS (specify)	LEAD (pb)	OTHERS (specify)
EP 11	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	
EP 12	2	B	0.002	N/A	N/A	N/A	N/A	N/A	N/A	
EP 13	1	E	0.000	N/A	N/A	N/A	N/A	N/A	N/A	
EP 14	1	E	0.000	N/A	N/A	N/A	N/A	N/A	N/A	
EP 15	2	B	0.015	N/A	N/A	N/A	N/A	N/A	N/A	
EP 16	2	B	0.015	N/A	N/A	N/A	N/A	N/A	N/A	
EP 17	2	E	0.000	N/A	N/A	N/A	N/A	N/A	N/A	
FEP 1	7		X							

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Missouri Department of Natural Resources' Air Pollution Control Program

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***ENVIRONMENTAL ASSESSMENT***

***OF***

***2210-2322 MARCONI STREET***

***ST. LOUIS, MISSOURI***

***FORMER McQUAY-NORRIS COMPANY***

**RECEIVED**

**MAR 09 1991**

**HAZARDOUS WASTE PROGRAM  
MISSOURI DEPARTMENT OF  
NATURAL RESOURCES**

***PREPARED FOR***

***AMERICAN BANK***

***PROJECT NO. 7315***

***MARCH 6, 1991***

*Ed Edgerly*



**SITEX  
Environmental, Inc.**

11905 Borman Drive  
St. Louis, MO 63146

(314) 569-1119

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## **INTRODUCTION**

SITEX Environmental, Inc. (SITEX) was retained by American Bank to conduct a Level I Environmental Assessment of the former McQuay-Norris Company manufacturing facility, 2210-2322 Marconi Street, St. Louis, Missouri (Subject Property). A location map is presented as Figure 1.

The purpose of a Level I Environmental Assessment is to identify observable environmental concerns. SITEX visually inspected the site for possible environmental hazards. Site history was reviewed by checking land records at the St. Louis City Courthouse and viewing aerial photographs of the location over the past 30 years. U.S. Environmental Protection Agency (EPA) records were checked for facilities known to be hazardous waste generators or involved in EPA's Superfund program within a one-mile radius of the Subject Property. Underground storage tanks (USTs) registered with the Missouri Department of Natural Resources (DNR) were located and noted within a one-mile radius. Interviews with appropriate government officials with a knowledge of any environmental problems at the site were also made.

## **SITE INSPECTION**

On February 21, 1991, SITEX conducted an on-site inspection of the Subject Property. The property consists of seven buildings and the paved and unpaved property surrounding the buildings. The Subject Property borders Marconi Street to the west, Bischoff Avenue to the north, the Northern Pacific Railroad to the southeast and residential properties to the east.

A map of the Subject Property is provided as Figure 2. The buildings and building sections are numbered according to McQuay-Norris drawings for reference. Buildings 18, 21, 22, 23, 24 and 30 no longer exist on the property, but since they are referenced in the report are included on the drawing.

McQuay-Norris Manufacturing Company produced piston rings on the Subject Property for approximately 70 years. The site is no longer used as a manufacturing facility, and McQuay-Norris discontinued occupancy approximately four years ago. Currently four businesses are occupying some of the buildings, and some of the buildings are vacant. The upper floor of Building 5 is currently occupied by Music Master, Inc., a recording studio. The ground floor is vacant. Building 25 is occupied by Shamrock Building Supply, Inc. Shamrock also occupies Building 2 for storage of windows and doors. Suburban Packaging occupies Buildings 3 and 4 for storage of packaging materials. The Print Shop, a business which conducts silk-screening operations and primarily prints logos and pictures on various articles of clothing, occupies Building 27. Building 1 is vacant. Most of the paved portion of the property is used for

**SITE INSPECTION (CONT.)**

parking or loading. SITEX inspected the portion of the property where Buildings 18, 21, 22, 23, 24 and 30 previously existed. The area is paved and it is impossible to determine if these buildings and the operations that went on therein had a negative impact on the soils or groundwater below the paving. However, no apparent negative effects were noted at the surface. The unpaved, triangular portion of the property located at the southern edge, is currently used as parking for Favazza's Restaurant, which is across Marconi Street from the Subject Property.

SITEX inspected all buildings for the presence of environmental hazards such as asbestos, transformers containing polychlorinated biphenyls (PCBs) and chemicals. The following paragraphs describe the results of this inspection. A photographic log documenting the inspection is included as Appendix A, and bulk analysis results for samples of suspected asbestos-containing materials taken from some of the buildings are included as Appendix B. Table 1 described the sample numbers, locations from which samples were taken, and the percent and type of asbestos.

The second floor of Building 5 was renovated two years ago by the current tenants. The building is predominantly steel and concrete construction. The renovated portion of the building had carpeted floors; painted concrete block, wood and drywall walls; and a fiber glass insulated ceiling. Two-foot-by-two-foot lay-in ceiling tiles were found in the recording studios. All new materials were used in renovation, therefore, asbestos is not suspected to be present in any of the renovated materials. At the bottom of the stairwell leading to the second floor, a pipe was found which had not been removed during renovation and still contained insulation. The pipe insulation was sampled and analyzed for asbestos. This sample was labeled Sample 7314-001, and it did not contain asbestos. Upstairs in the back storeroom 35 feet of steam pipe, which also had not been removed during renovation, were found to be covered with insulation. The insulation was sampled, labeled Sample 7314-002 and analyzed. It was found to contain 25 to 30 percent amosite asbestos and 10 to 15 percent chrysotile asbestos.

The ground floor of Building 5 was locked and inaccessible to SITEX personnel. However, by looking in the windows it was possible to see that there were many pipes with pipe insulation very similar to those pipes found upstairs. It was impossible to determine the exact amount of asbestos in the lower level, but it is probable that several hundred feet of asbestos-containing pipe insulation are found in that area. Some rooms on the lower level contained one-foot-by-one-foot ceiling tile which may or may not contain asbestos. Walls and floors consisted of concrete.

**SITE INSPECTION (CONT.)**

A transformer is found near the entrance to Building 5. According to Mr. Greg Trampe, Manager of Music Masters, Inc. the transformer was installed when renovation was completed, and therefore, it is too new to contain PCBs. There is evidence of three USTs on the south side of Building 5. Tank vents and fill pipes are visible from the surface. The status of these USTs is discussed in the property background research section.

SITEX visually inspected Building 25 which houses the offices of Shamrock Building Supply, Inc. The offices are contained in a three-year-old structure built within the older building. The materials within the newer structure are not suspected of containing asbestos, and therefore, were not sampled. The older portion of the building is used to store windows and doors. The building is predominantly concrete and steel, with many insulated pipes running along the ceiling. The pipes were not accessible for sampling, but the probability is very high that they contain asbestos.

SITEX visually inspected Building 2, which is used for storing windows and doors from Shamrock Building Supply, Inc. Building 2 is very similar in size and construction to Building 25. It is predominantly concrete and steel construction, and contains numerous insulated pipes running along the ceiling. There is a high probability that these pipes contain asbestos. This building contains a small, lower level storage room, which contains insulated pipes. The pipes were sampled by SITEX, labeled Sample 7314-009 and analyzed for asbestos. The insulation was found to contain 50 to 55 percent chrysotile asbestos and 10 to 15 percent amosite asbestos.

A representative of Shamrock Building Supply, Inc. escorted SITEX through Building 1, which is currently vacant. This building was most recently used as offices for McQuay-Norris and is predominantly concrete and steel construction. The interior consists of plaster lathe walls, drop ceiling and carpeted or tile covered floors. Most interior materials are in poor condition. The lower floor suffers from water damage. In the lower level SITEX sampled white floor tile (Sample 7315-003), wall insulation (Sample 7315-004), and green floor tile (Sample 7315-005). The wall insulation does not contain asbestos, however, the white floor tile contains 1 to 5 percent chrysotile asbestos, and the green floor tile contains 10 to 15 percent chrysotile asbestos. Insulated pipes are found near the ceiling throughout the building. SITEX sampled pipe insulation (Sample 7315-007), as well as a mudded joint from a pipe (Sample 7315-008). The pipe insulation contains 70 to 75 percent chrysotile asbestos, and the mudded joint contains 40 to 45 per cent chrysotile asbestos.

## **SITE INSPECTION (CONT.)**

SITEX personnel inspected the upper floor of Building 1 and found additional floor tile and insulated pipes similar to those found on the lower level. Blown insulation was discovered above the ceiling, and sampled (Sample 7315-006). Asbestos was not detected in this sample.

A 35-gallon barrel labeled as hydrochloric acid was found on the lower level of Building 1. The barrel was labeled as a descaler-delimer, and was three-quarters full.

Buildings 3 and 4 were inspected. These buildings are currently occupied by Suburban Packaging, which uses the buildings for storage and office space. The buildings are similar in size and construction to Buildings 2 and 25. Buildings 3 and 4 are predominantly concrete and steel construction with many insulated pipes running along the ceiling. The pipe insulation could not be sampled due to its inaccessibility, however, it is very likely that the insulation contains asbestos. The alleyway between Buildings 3 and 4 is inaccessible, but through a window it is possible to see an unknown number of transformers being stored. The status of these transformers with respect to PCBs is unknown. Several inactive hoppers are also found in the alley. The purpose of these hoppers is unknown, and therefore, their environmental impact cannot be determined without further investigation.

Building 27, which is currently occupied by the Print Shop, was inspected. The building contains one transformer which is air-cooled, and therefore, does not contain PCBs. No materials suspected of containing asbestos were found. Various chemicals used by the Print Shop during silk-screening operations, were found in the building. These included mineral spirits, several half-gallon containers of Diazo Direct Immulsion and one 55-gallon drum of xylene.

## **PROPERTY BACKGROUND RESEARCH**

Aerial photographs of the site were obtained for the years 1960, 1979 and 1990. Appendix C provides copies of these photographs. The photograph from 1960 shows the property as it appeared when it was being operated as a piston manufacturing facility by McQuay-Norris. At that time five additional buildings were located on the central portion of the property, Buildings 18, 21, 22, 23 and 24. The aerial photograph from 1979 shows that the property had not changed. The aerial photograph from 1990 shows that Buildings 18, 21, 22, 23 and 24 have been removed, and a large portion of the adjacent property is currently residential.

## **PROPERTY BACKGROUND RESEARCH (CONT.)**

The St. Louis Department of Health, Missouri Department of Natural Resources and St. Louis City Fire Marshall were contacted, and information regarding environmental hazards associated with the Subject Property was requested. These sources were unable to provide additional information concerning environmental hazards associated with the property.

Building permits pertaining to the Subject Property were researched at the St. Louis Courthouse. Drawings obtained during this search indicate the age and original use of the building. The following provides details for each building.

Building 1 was built in 1919, and consisted of fireproof reinforced concrete construction. It was originally used as a shipping and stock office.

Buildings 2, 3 and 4 are steel frame buildings with concrete floors, wood sheathed roofs, concrete walls and four foot high metal sash windows. Buildings 3, 4 and the southern half of Building 2 were built in 1919. The northern half of Building 2 was added in 1946. Building 2 was originally used as a machine shop, Building 3 as a warehouse, and Building 4 as a foundry.

Building 5 was built in 1919. It is a steel frame building with concrete walls and floors. The original use of this building is unclear. One drawing indicates it was used as a garage and carpenter shop, and another shows it was used as a laboratory and cafe.

Building 25 consists of a steel frame and concrete floor, brick apron wall, and a concrete and steel roof. Drawings do not indicate the year it was built, but do indicate that it was used as a foundry.

Building 27 was built in 1947 and consists of concrete frame, floor and roof, with tile and brick curtain walls and partitions. The building was originally used for offices and lockers.

Buildings 18, 21, 22, 23 and 24 were built in 1919. These buildings were removed some time after 1985, but are mentioned in this report because of the nature of operations within the buildings. The original use of Building 18 was storage; Building 22 was a maintenance facility; Building 24 was a laboratory; and Buildings 21 and 23 were plating facilities. Building 30 was located to the north of Building 25 and probably removed with Buildings 18, 21, 22, 23 and 24. It was originally used for storage of machinery.

**PROPERTY BACKGROUND RESEARCH (CONT.)**

An environmental risk assessment report prepared by Risk Science International of Washington, DC, dated July 8, 1986, describes operations at the facility at that time. According to the report, Buildings 2, 3 and 4 housed plating, machining and shipping operations; and Building 25 was used as storage of raw materials. Offices were located in Buildings 1, 5 and 27. Building 22 was used as a maintenance facility; Building 23 was used for chrome plating; Building 24 was used for printing; and Building 30 was used for storage of hazardous waste.

According to the Risk Science International report, the following chemicals were used by the manufacturing facility: chromic acid, zinc phosphate, tin compounds, hydraulic and water soluble oils, 1,1,1-trichloroethane (TCE) and acetone, acid and alkaline cleaners, and sodium cyanide.

The Risk report also confirms SITEX's observation that three USTs are located near Building 5. The report states that they were previously used to store gasoline, but are now filled with gravel. The report makes no comment about the integrity of the tanks, or whether or not they were known to leak. The report references a fourth tank, an 1,000-gallon steel underground gasoline storage tank, which was also filled with gravel. It was unclear as to the tank's location, and makes no comment on the integrity of the tank. According to a report issued in 1985 by SITEX Corporation, a predecessor organization to SITEX Environmental, the USTs were tested and found to be intact. The SITEX Corporation report does not reference a fourth UST.

According to the Risk report, McQuay-Norris was registered as a generator of hazardous waste (EPA I.D. No. MOT 300010345), and generated wastes such as waste TCE, cyanide liquids and sludges, sulfuric acid solutions, chromic acid sludge and liquids, manganese phosphate sludge and waste oil. Prior to the 1950s, spent plating solutions were discharged into the Metropolitan Sewer District (MSD) sewer. Apparently, after that time all hazardous wastes were properly disposed of.

A report issued by SITEX Corporation in July 1985 describes the potential for groundwater contamination beneath the Subject Property. The following were listed as potential sources of contamination:

- The phosphate plating line wastewater collection sump.
- The chromium plating line wastewater collection sump.
- Three buried underground fuel tanks.
- One above ground fuel tank.



#### PROPERTY BACKGROUND RESEARCH (CONT.)

- Compressed air tank blowdown.
- Kerosene and solvent recovery units.
- Wood preservative facility located on property adjacent to Subject Property.

The above-ground storage tank and kerosene and solvent recovery units were both located on what is now residential property adjacent to, and east of the Subject Property. The wood-preservative facility is located to the southeast of the property, and is currently still operating. The chromium plating line sump was located in Building 23, and therefore, no longer exists.

#### ADJACENT SITE USAGE

A review of the neighboring areas shows residential properties to the west and north, and industrial properties to the south and east of the Subject Property.

Several government publications were researched to determine the presence of potentially hazardous sites within a one-mile radius of the Subject Property. These publications included the following:


- Missouri Department of Natural Resources (DNR) Resource Recovery and Conservation Act (RCRA) Hazardous Waste Generator List.
- U.S. Environmental Protection Agency's Comprehensive Environmental Resource Conservation and Liability Act (CERCLIS) Superfund Site List.
- DNR List of Missouri Underground Storage Tank Facilities.

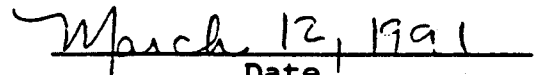
Several sites from each list were found within a one-mile radius of the Subject Property.

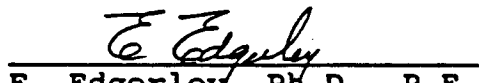
Hazardous waste generators were found and are identified in Appendix D. Superfund sites were found and are identified in Appendix E, and Underground Storage Tank facilities were found and are identified in Appendix F. There do not appear to be any environmental hazards originating from the operations of the current tenants of the property.

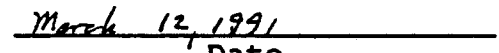
## CONCLUSION

The Level I Environmental Assessment of the Subject Property revealed a number of environmental concerns. There are asbestos-containing materials in the form of pipe insulation and floor tile in some of the buildings. Transformers possibly contaminated with PCBs are found in one building, and a variety of chemicals were used by the manufacturing company for over one-half century. Three USTs still exist on the property, although they have been documented as being filled with gravel. Numerous hazardous waste generators, Superfund sites and UST sites are located within a one-mile radius of the Subject Property. It is not clear if soils or groundwater beneath the property have been contaminated.

  
Diane R. Maijer  
Environmental Scientist

  
Date

  
E. Edgerley, Ph.D., P.E.  
President

  
Date

**Table 1**  
**Bulk Sample Results**

**American Bank**

**PROJECT NO. 7315**

<u>Sample No.</u>	<u>Location</u>	<u>Percent Asbestos</u>
7315-001	pipe insulation Building 5	none detected
7315-002	pipe insulation Building 5	25-30% amosite 10-15% chrysotile
7315-003	floor tile, white Building 1, lower level	1- 5% chrysotile
7315-004	wall insulation Building 1, lower level	none detected
7315-005	floor tile, green Building 1, lower level	10-15% chrysotile 10-15% chrysotile in mastic
7315-006	blown insulation Building 1, upper level	none detected
7315-007	pipe insulation Building 1, lower level	70-75% chrysotile
7315-008	mudded joint Building 1, lower level	40-45% chrysotile
7315-009	pipe insulation Building 2, lower level, storage room	50-55% chrysotile 10-15% amosite

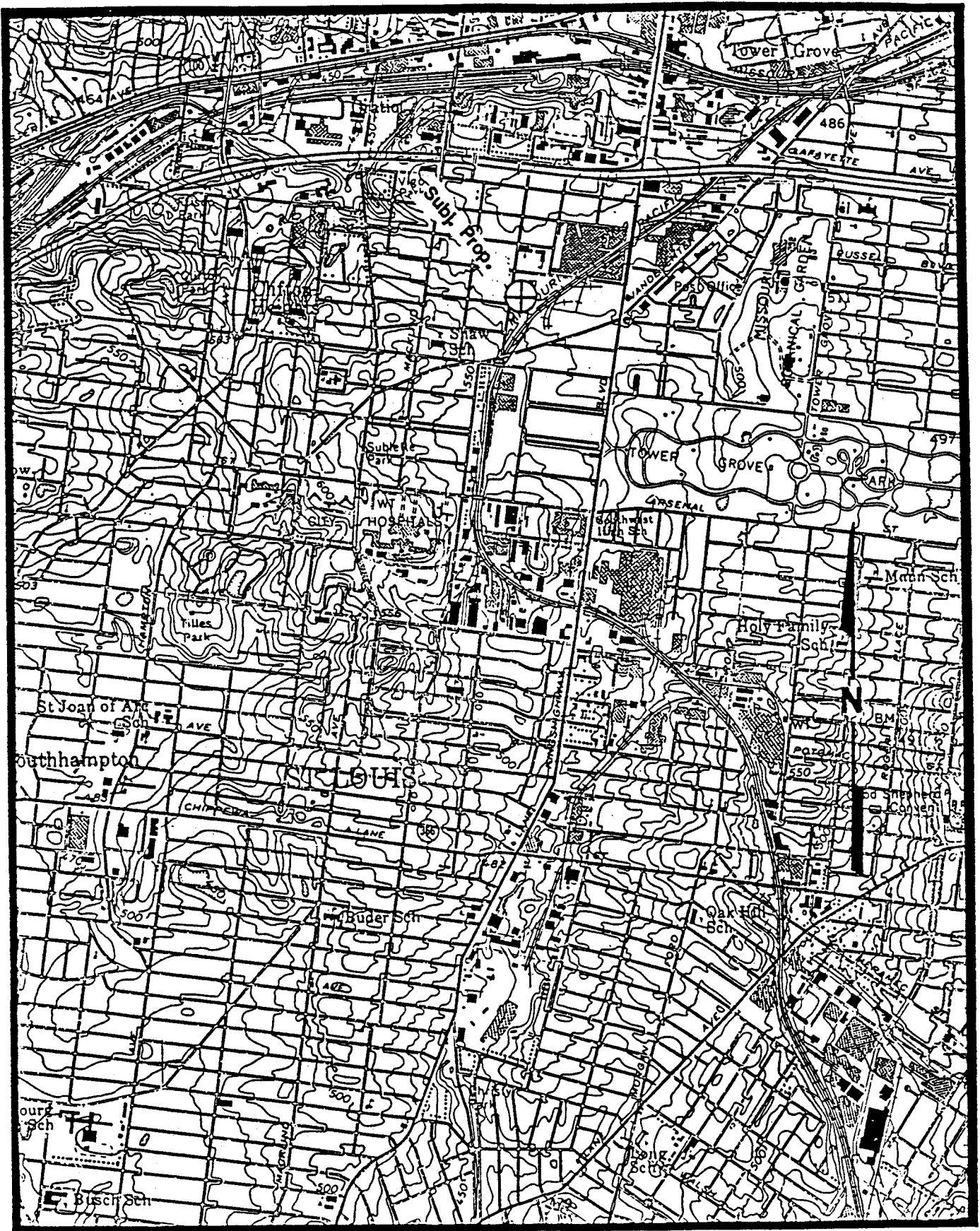
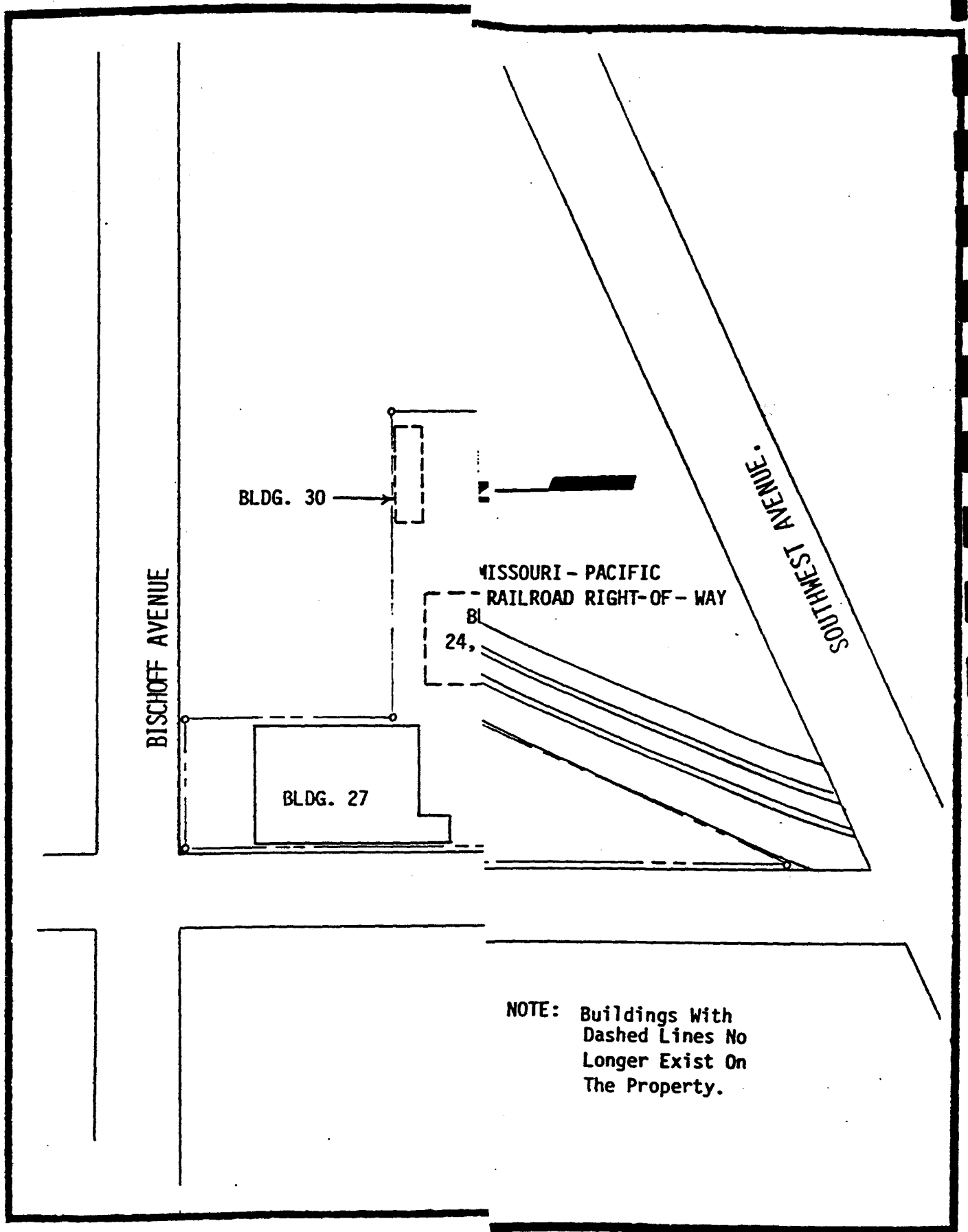


Figure 1  
Project Location Map



il, Inc.

11905 Borman Drive  
St. Louis, MO 63146  
(314) 569-1119

APPENDIX A

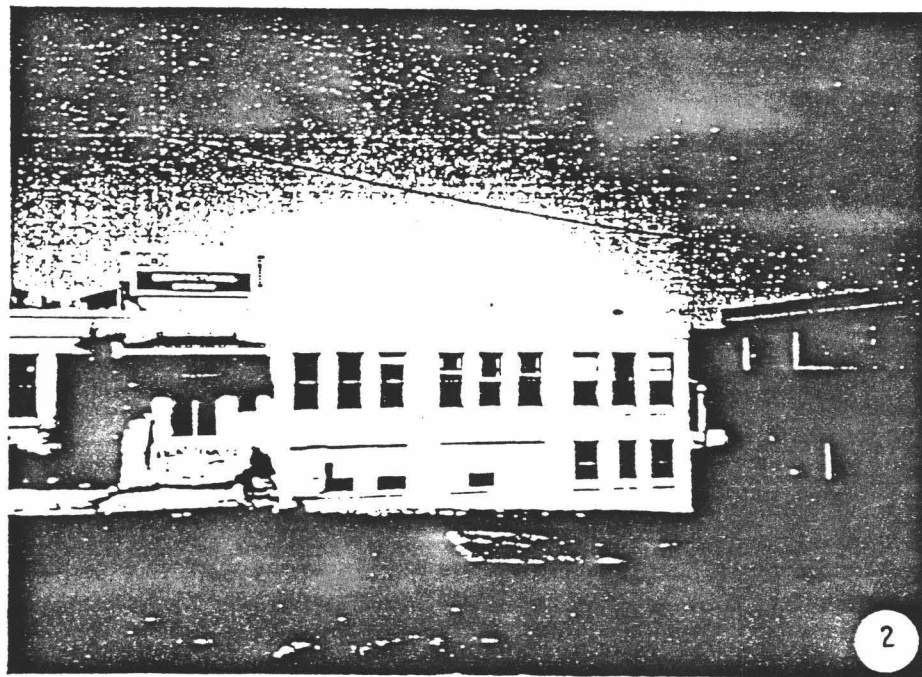
*PHOTOGRAPH LOG*

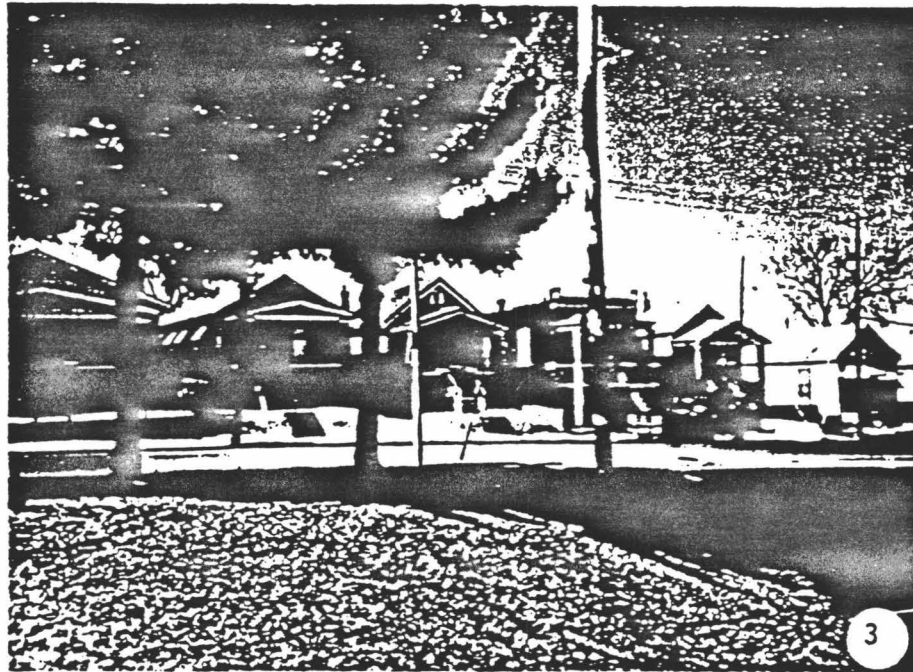
## Former McQuay-Norris Manufacturing Property

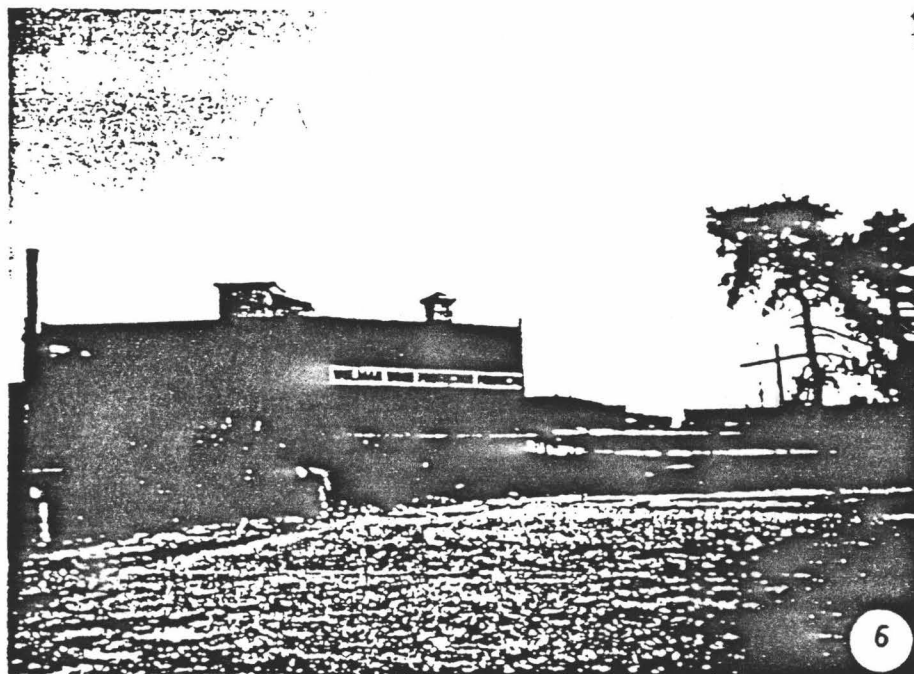
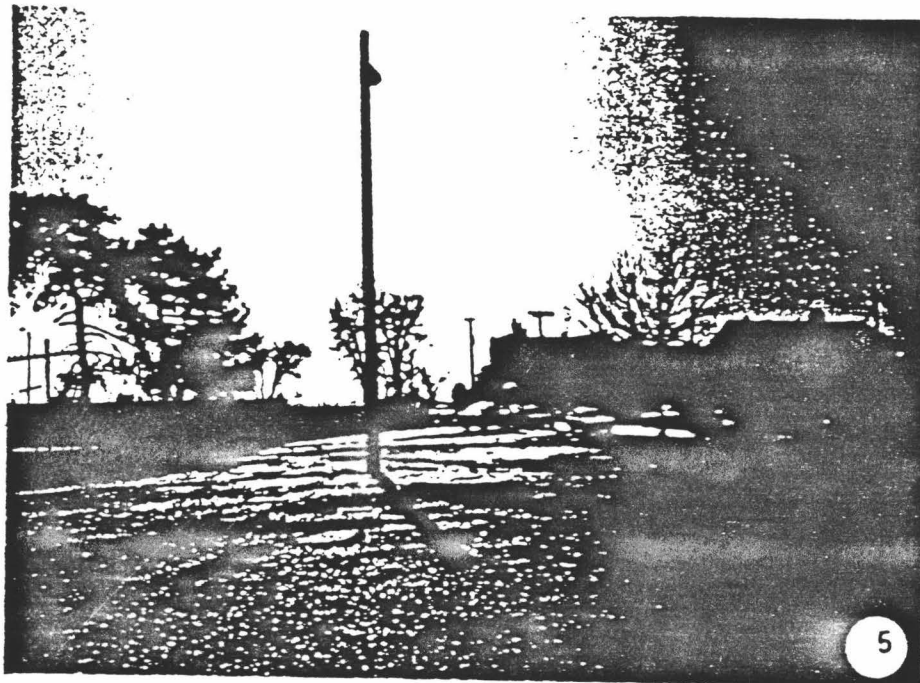
## PHOTO LOG

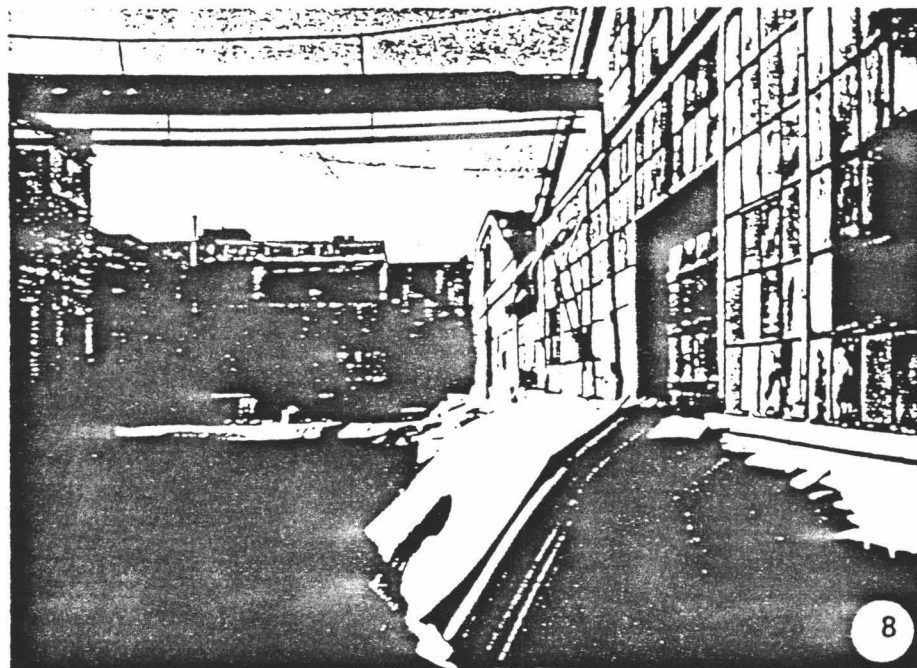
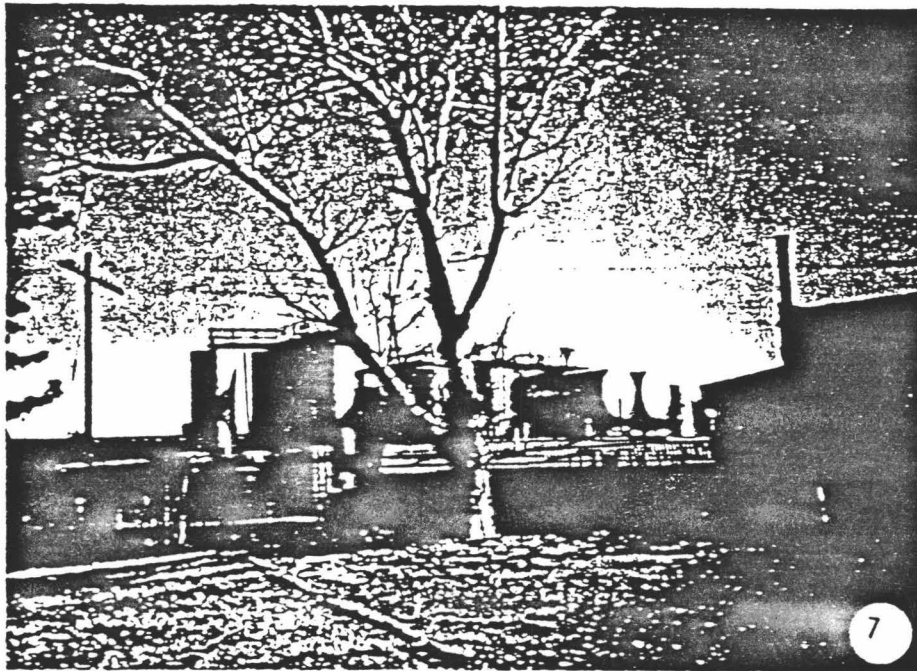
PROJECT NO. 7315

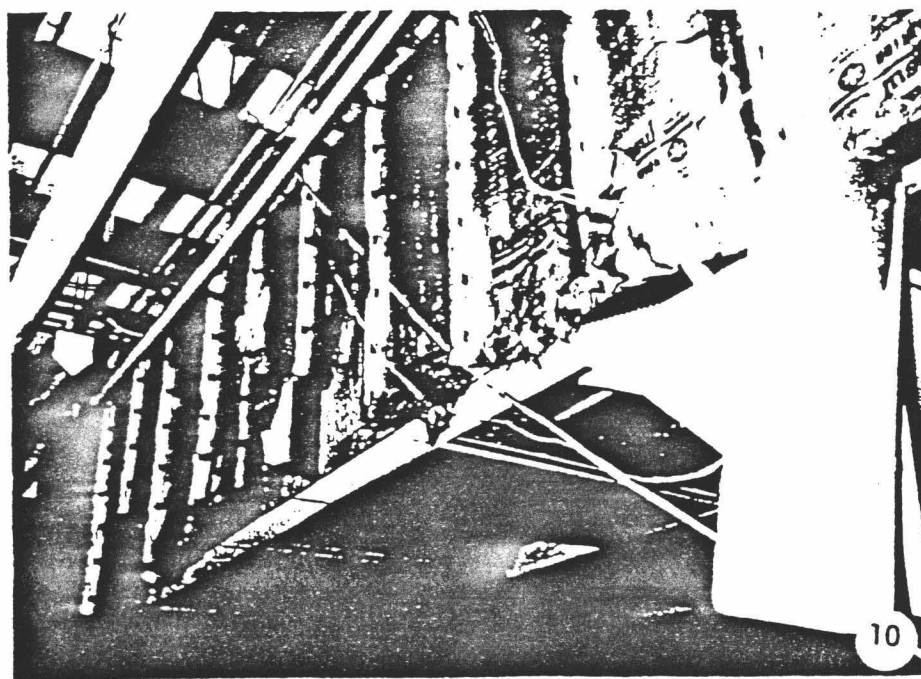
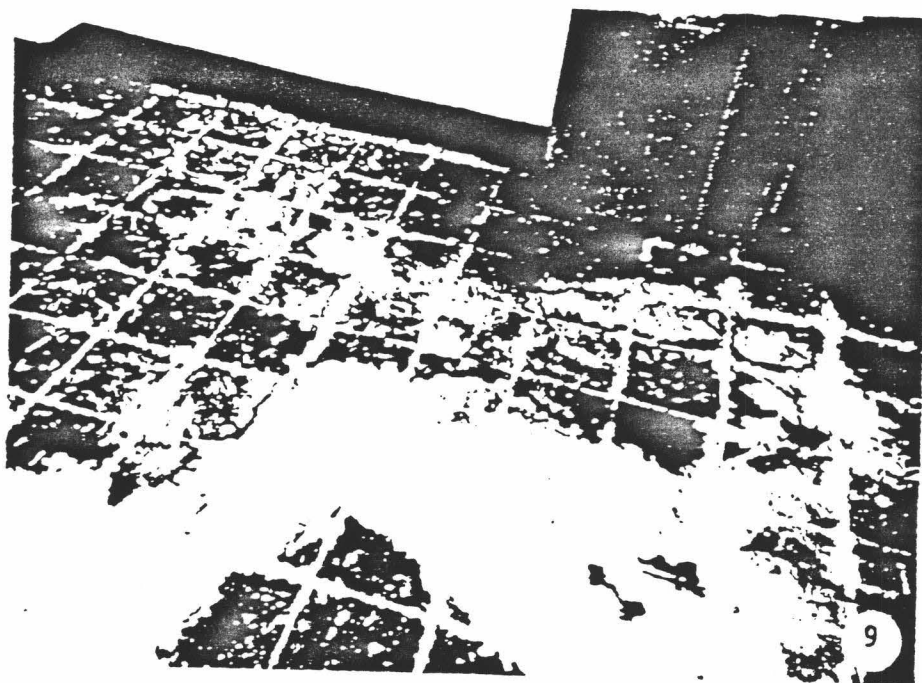
<u>Photo No.</u>	<u>Description</u>
1	Building 5, looking northeast, note transformer and underground storage tank vent pipes.
2	Building 1, looking north.
3	Residences adjacent to subject property, across Marconi Avenue, looking southwest.
4	Residences adjacent to subject property, across Marconi Avenue, looking northwest.
5	South edge of subject property, currently used for parking for Favazza's Restaurant.
6	Wood preservative company, adjacent to subject property, looking southeast.
7	Wood preservative company, adjacent to subject property, looking east.
8	From left to right, Buildings 5, 1, 3 and 4, looking west.
9	Floor tile, Building 1, lower level, Sample No. 7315-003.
10	Wall insulation, Building 1, lower level, Sample No. 7315-004.
11	Blown insulation, Building 1, upper level, Sample No. 7315-007.
12	Pipe insulation, Building 1, lower level, Samples No. 7315-007 and 7315-008.
13	Pipe Insulation Building 2, small storage room in lower level, Sample No. 7315-009.
14	Building 2, small storage area in lower level.

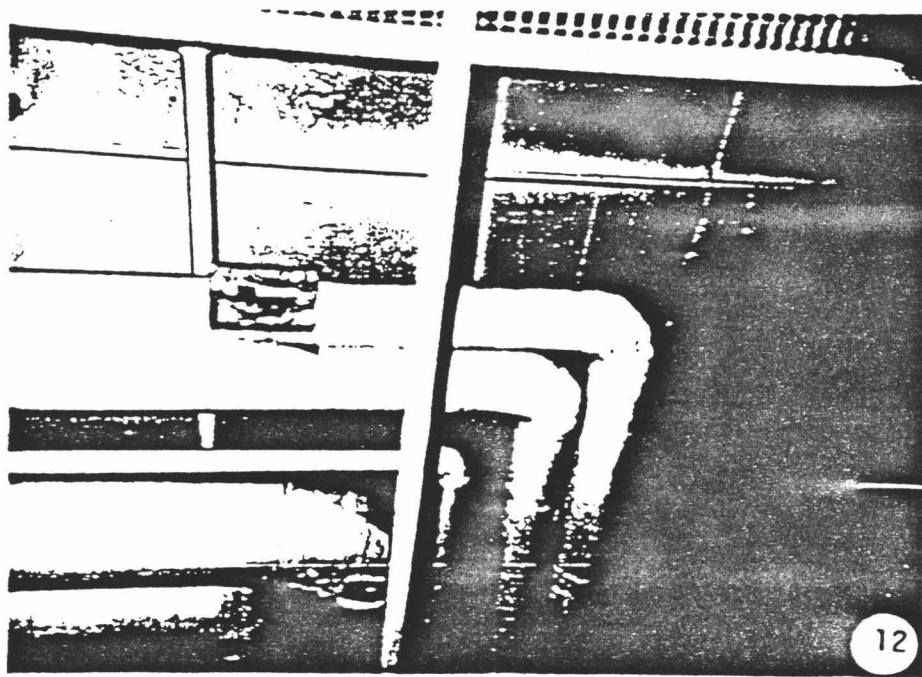
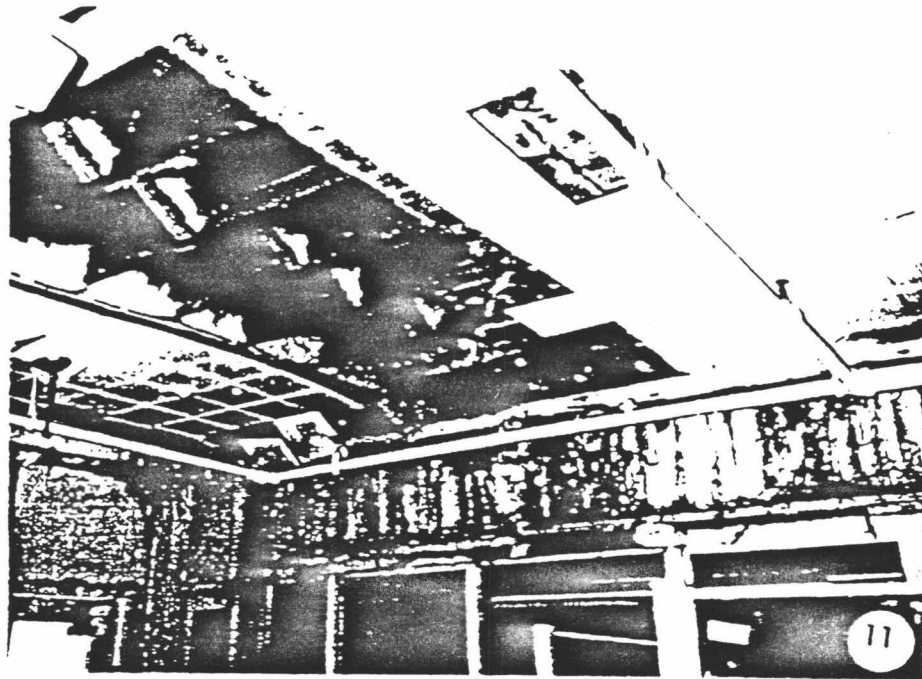


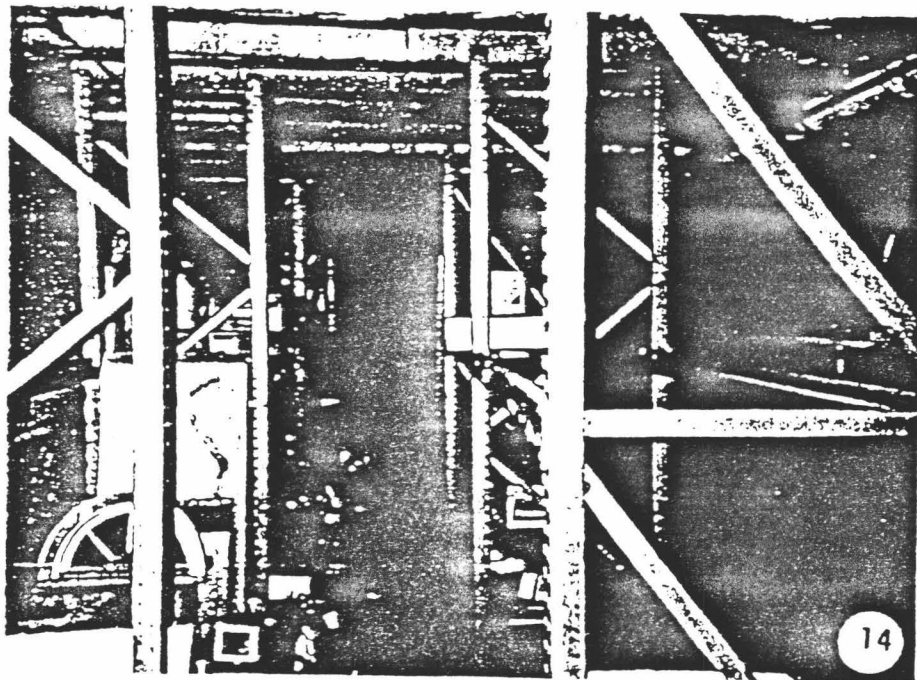
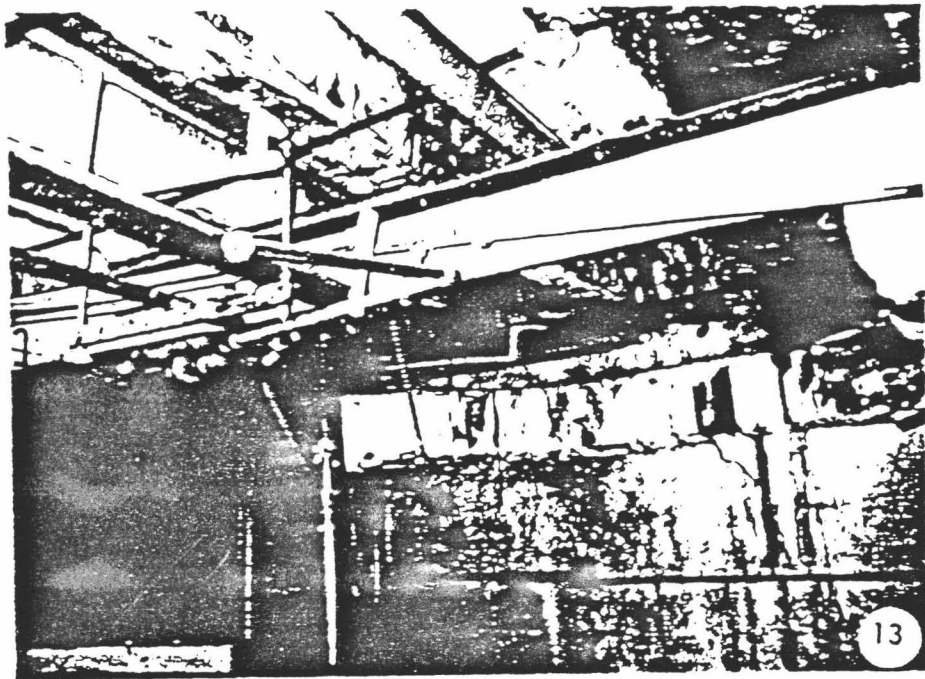






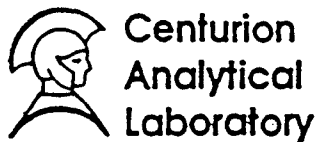






APPENDIX B

*BULK ANALYSIS RESULTS*



CENTURION ANALYTICAL LABORATORY

BULK SAMPLE ANALYSIS

Page 1 of

Client: SITEX

Date Received: 2-22-91

Client Project No.: 7315

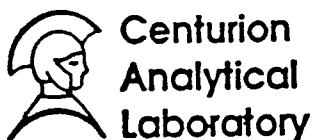
Date Reported: 2-22-91

Technique: Polarized Light Microscopy with Dispersion Staining  
In accordance with NIOSH 7403 Draft Method

Lab No.	Sample No.	Asbestos Detected & Percentage *	Fibrous Material	Non-Fibrous Material
B-0651	7315-001	None Detected	Cellulose	Paint, Binders
B-0652	7315-002	25-30% Amosite 10-15% Chrysotile	Cellulose	Paint, Binders
B-0653	7315-003	>1-5% Chrysotile 10-15% Chrysotile (In mastic)		Aggregate, Binders
B-0654	7315-004	None Detected	Cellulose	Binders
B-0655	7315-005	10-15% Chrysotile 10-15% Chrysotile (In mastic)		Aggregate, Binders
B-0656	7315-006	None Detected	Glass wool	Binders

Comments:

\* The upper detection limit is 100 percent.  
The lower detection limit is less than 1 percent.



CENTURION ANALYTICAL LABORATORY

Page 2 of 2

BULK SAMPLE ANALYSIS

ent: SITEX

Date Received: 2-22-91

ent Project No.: 7315

Date Reported: 2-22-91

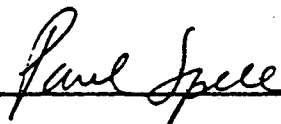
Technique: Polarized Light Microscopy with Dispersion Staining  
In accordance with NIOSH 7403 Draft Method

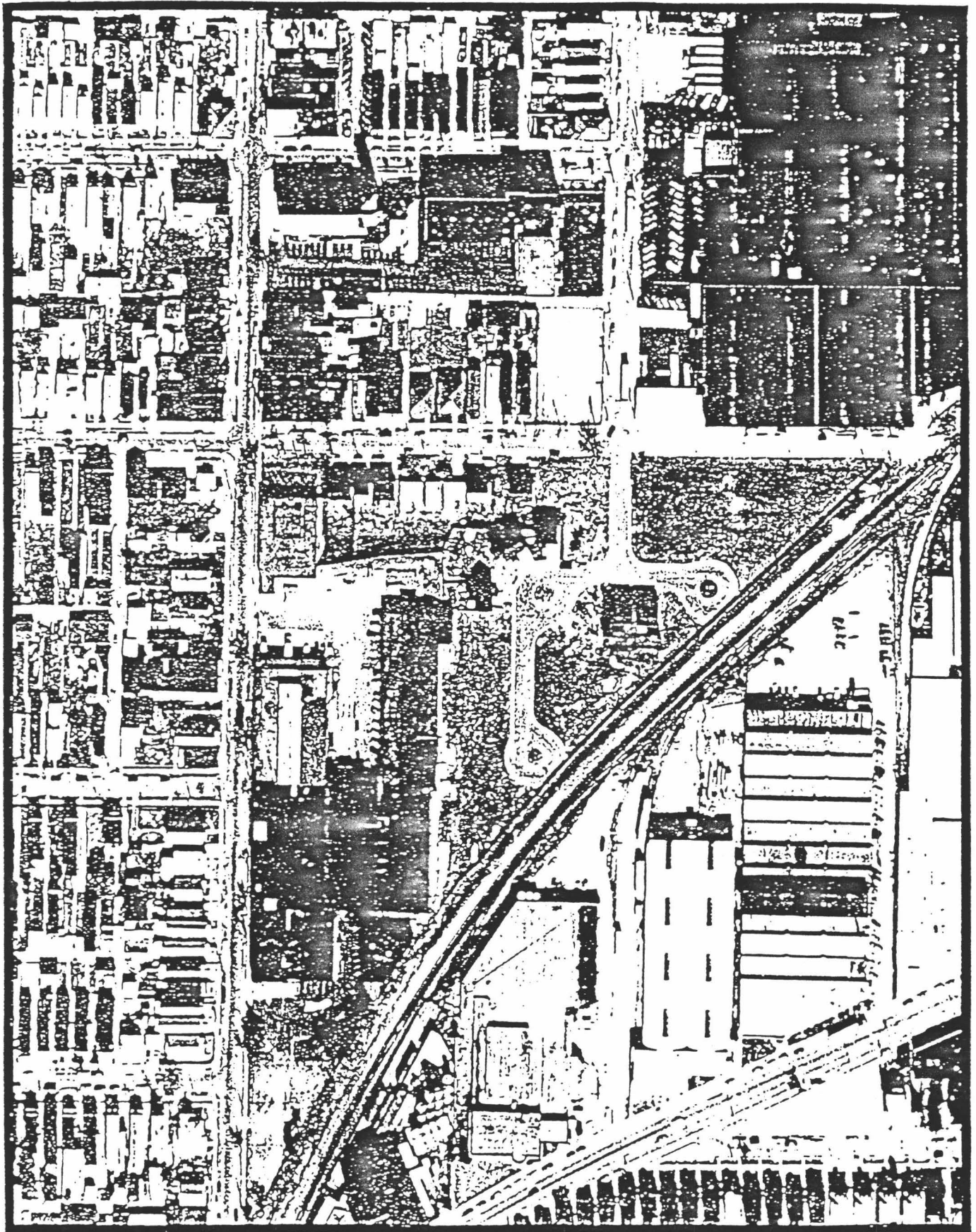
Lab No.	Sample No.	Asbestos Detected & Percentage *	Fibrous Material	Non-Fibrous Material
0657	7315-007	70-75% Chrysotile	Cellulose, Antigorite, Picrolite	Paint, Binders
0658	7315-008	40-45% Chrysotile	Cellulose	Paint, Binders
0659	7315-009	50-55% Chrysotile 10-15% Amosite		Aggregate, Binders

ments:

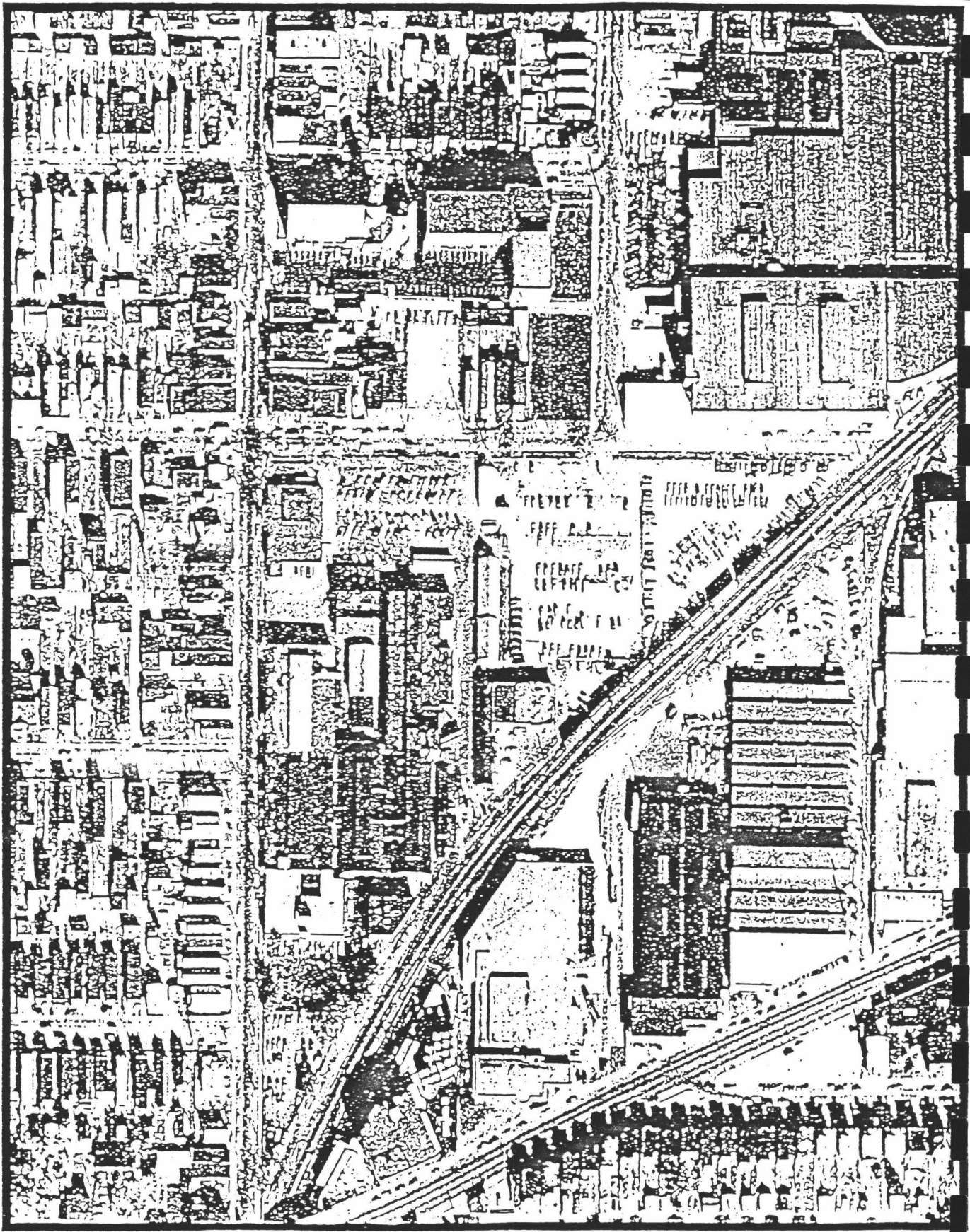
The upper detection limit is 100 percent.

The lower detection limit is less than 1 percent.

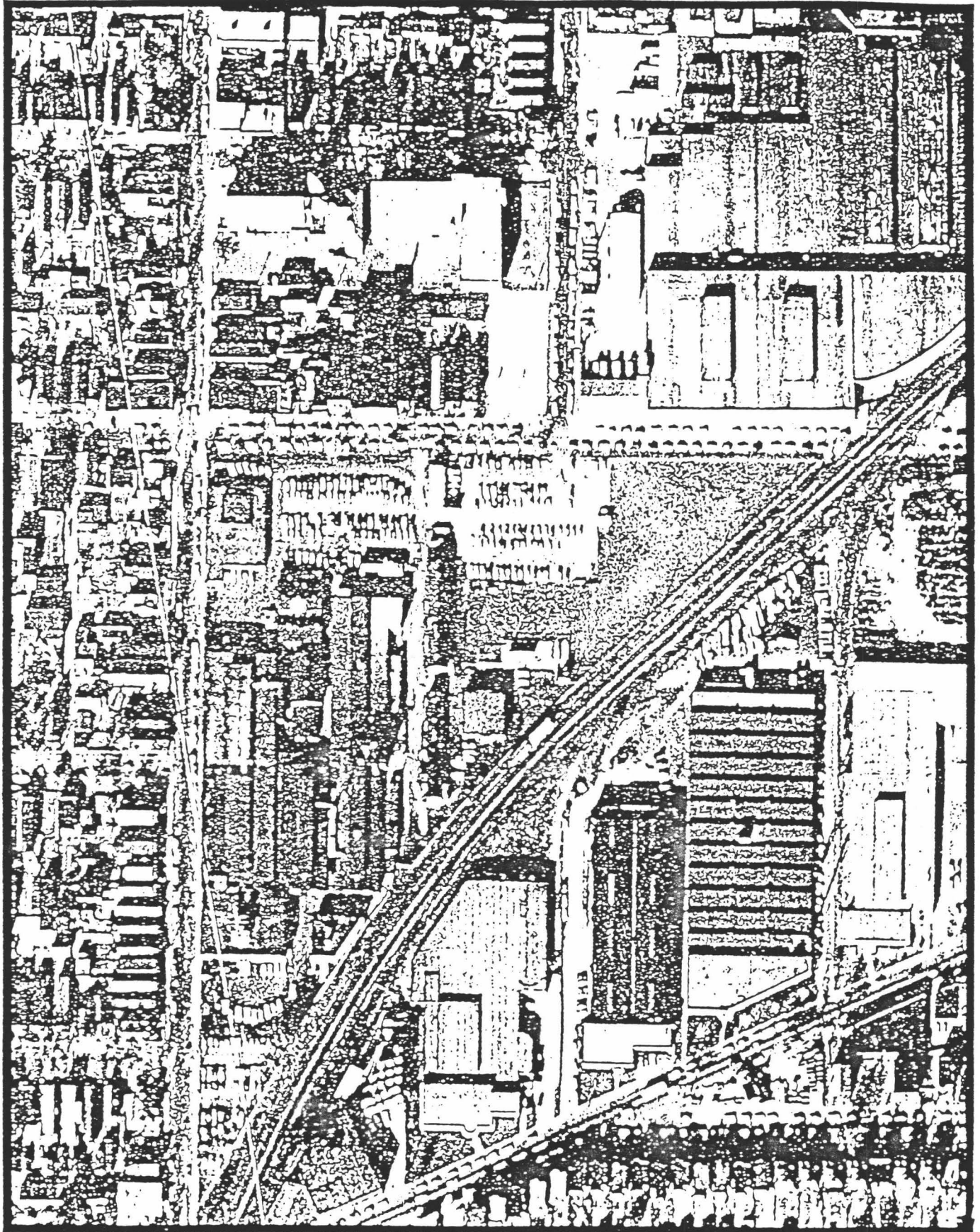
  
Paul Spell  
Laboratory Supervisor



Aerial Photograph  
Flown: 2-19-90  
Scale: 1"=200'



Aerial Photograph  
Flown: 12-19-79  
Scale: 1" = 200'



Aerial Photograph  
Flown: 1-8-60  
Scale: 1"= 200'

APPENDIX D

*HAZARDOUS WASTE GENERATORS (RCRA)*

American Bank

Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

CERCLIS Site Locations

Within One-Mile Radius of Site

1. ABEX Corporation  
National Bearing Division  
4930 Manchester  
St. Louis, MO 63110
2. Ace Metals Company  
5900 Manchester  
St. Louis, MO 63110
3. Acme Battery (Former Location)  
1465 W. Vandeventer  
St. Louis, MO 63110
4. American Bearing Corporation  
4501 Fyler  
St. Louis, MO 63116
5. Chase Bag Company  
5051 Southwest Avenue  
St. Louis, MO 63110
6. Doyle, A. T. Co., Inc.  
2360 South 59th Street  
St. Louis, MO 63110
7. Drumtech Inc.  
5066 near Manchester Avenue  
St. Louis, MO 63110
8. King Adhesives Corporation  
5227 Northrup Avenue  
St. Louis, MO 63110
9. Marnati Quarry  
5037 Parker Avenue  
St. Louis, MO 63139
10. Midwest Industrial Chemical Company  
1509 Sublette Avenue  
St. Louis, MO 63110

American Bank (Cont.)

Subject Property 2210-2232 Marconi

St. Louis, Missouri

PROJECT NO. 7315

**CERCLIS Site Locations**

Within One- Mile Radius of Site

11. MIRAX Chemical Products Corporation  
4999 Fyler  
St. Louis, MO 63139
12. Mueller Brass & Foundry Co.  
4485 Fyler  
St. Louis, MO 63139
13. Navy Brand Manufacturing Company  
5111 Southwest Avenue  
St. Louis, MO 63110
14. Schumann, Ray & Associates  
5464 Highland Park Drive  
St. Louis, MO 63110
15. Sterling Lacquer Manufacturing Co.  
3150 Brannon Avenue  
St. Louis, MO 63139
16. St. Louis Lead and Oil Company  
5548 Manchester Avenue  
St. Louis, MO 63110
17. Second District Police District  
2634 Hampton Avenue  
St. Louis, MO 63139
18. Union Electric Company Macklind Substation  
1633 Macklind Avenue  
St. Louis, MO 63139
19. Walter Wurdack, Inc.  
4977 Fyler  
St. Louis, MO 63139

Outside One-Mile Radius of Site

20. Brock Company  
1367 S. Kingshighway Blvd.  
St. Louis, MO 63110

American Bank

Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

RCRA Site Locations

Within One-Mile Radius of Site

1. Abel Rack Company  
2100 S. Vandeventer  
St. Louis, MO 63110
2. Allied Health Care Products, Inc.  
1720 Sublette  
St. Louis, MO 63110
3. Caldwell Paint Manufacturing Company, Inc.  
4433 Fyler Avenue  
St. Louis, MO 63116
4. Chase Bag Company  
5051 Southwest Avenue  
St. Louis, MO 63110
5. Datamax Office Systems, Inc.  
2121 Hampton Avenue  
St. Louis, MO 63139
6. Drumtech Inc.  
5066 near Manchester Avenue  
St. Louis, MO 63110
7. Dynacraft, Inc.  
5000 Connecticut Avenue  
St. Louis, MO 63139
8. Earl-Boyd's Auto Body  
5970 Southwest Avenue  
St. Louis, MO 63139
9. Eastern Electric Apparatus  
1565 S. Vandeventer  
St. Louis, MO 63110
10. Ernie Patti Oldsmobile  
3400 S. Kingshighway  
St. Louis, MO 63139

American Bank

St. Louis, Missouri

PROJECT NO. 7315

RCRA Site Locations (Cont.)

Within One-Mile Radius of Site

11. Forte Buick  
2244 S. Kingshighway
12. Gary Vincel Pontiac, Inc.  
3295 S. Kingshighway  
St. Louis, MO 63139
13. General Electric  
1115 East Road  
St. Louis, MO 63110
14. King Adhesives Corporation  
5227 Northrup Avenue  
St. Louis, MO 63110
15. Kop-Coat Wood Treating Chemical Co., Inc.  
5137 Southwest Avenue  
St. Louis, MO 63110
16. Leggett & Plate  
2101 S. Vandeventer  
St. Louis, MO 63110
17. Machinery Inc.  
5081 Manchester Avenue  
St. Louis, MO 63110
18. Materials Handling Equipment, Inc.  
5231 Manchester Avenue  
St. Louis, MO 63110
19. MEECO, Inc.  
1600 S. Kingshighway  
St. Louis, MO 63110
20. Metropolitan St. Louis Sewer District  
1900 Sulphur  
St. Louis, MO 63110
21. Midland Color  
5215 Manchester Avenue  
St. Louis, MO 63110

American Bank

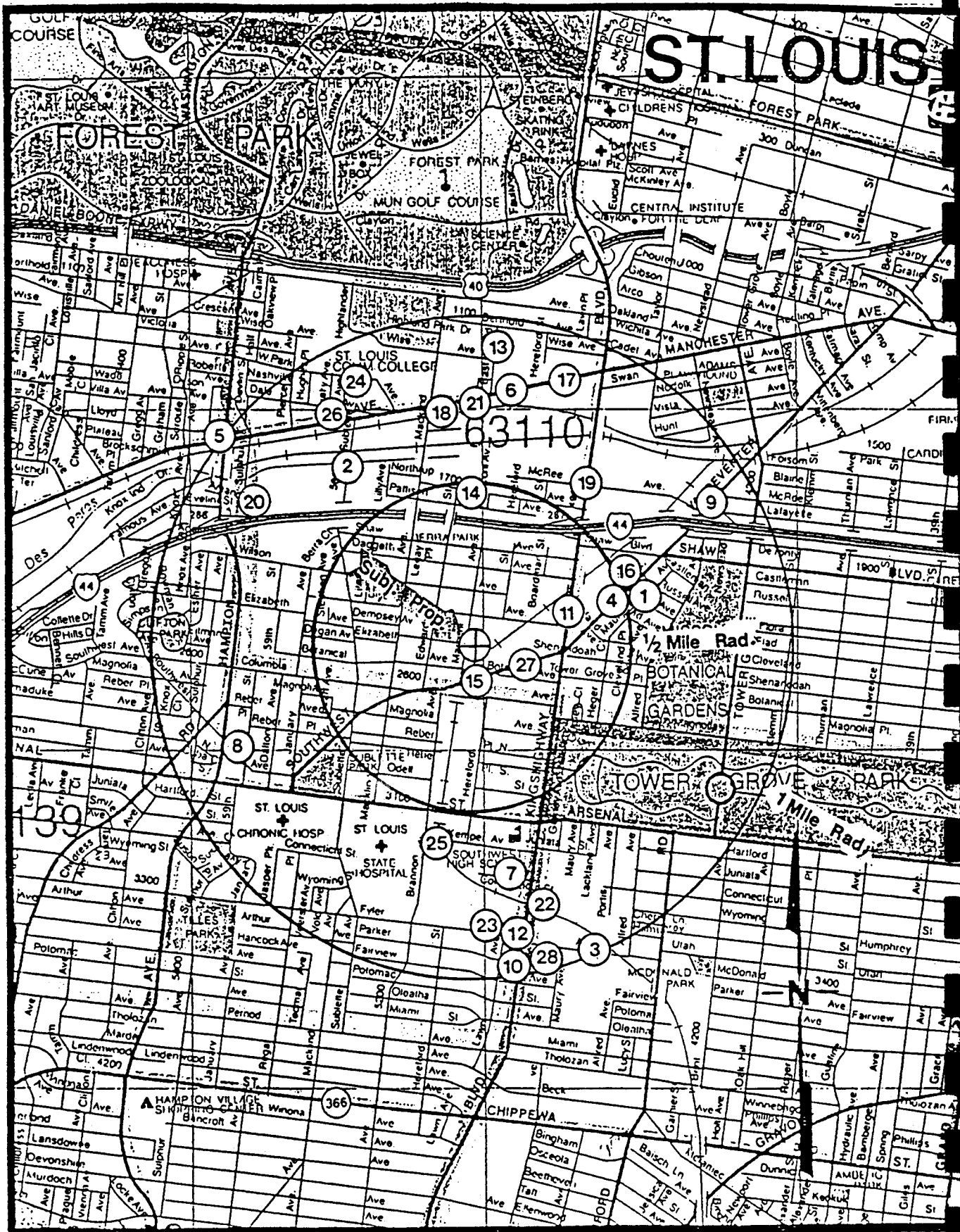
St. Louis, Missouri

PROJECT NO. 7315

RCRA Site Locations (Cont.)

Within One-Mile Radius of Site

- 22. National Can  
3200 S. Kingshighway  
St. Louis, MO 63139
- 23. Packaging Concepts, Inc.  
4971 Fyler Avenue  
St. Louis, MO 63139
- 24. Paulo Products Company  
5711 West Park Avenue  
St. Louis, MO 63110
- 25. Sterling Lacquer Manufacturing Co.  
3150 Brannon Avenue  
St. Louis, MO 63139
- 26. Superior Sandblasting & Fabrication Company  
5645 Manchester Avenue  
St. Louis, MO 63110
- 27. Tension Envelope Company  
5001 Southwest Avenue
- 28. Top Spot Auto Body  
4848 Parker Avenue  
St. Louis, MO 63116



RCRA Site Locations

APPENDIX E

*SUPERFUND SITES (CERCLIS)*

**CERCLIS Site Locations**

**American Bank**

**Subject Property 2210-2322 Marconi**

**St. Louis, Missouri**

**PROJECT NO. 7315**

**Within One-Mile Radius of Site**

1. ABEX Corporation  
National Bearing Division  
4930 Manchester  
St. Louis, MO 63110
2. Ace Metals Company  
5900 Manchester  
St. Louis, MO 63110
3. Acme Battery (Former Location)  
1465 W. Vandeventer  
St. Louis, MO 63110
4. American Bearing Corporation  
4501 Fyler  
St. Louis, MO 63116
5. Chase Bag Company  
5051 Southwest Avenue  
St. Louis, MO 63110
6. Doyle, A. T. Co., Inc.  
2360 South 59th Street  
St. Louis, MO 63110
7. Drumtech Inc.  
5066 near Manchester Avenue  
St. Louis, MO 63110
8. King Adhesives Corporation  
5227 Northrup Avenue  
St. Louis, MO 63110
9. Marnati Quarry  
5037 Parker Avenue  
St. Louis, MO 63139

CERCLIS Site Locations (Cont.)

American Bank

Subject Property 2210-2232 Marconi

St. Louis, Missouri

PROJECT NO. 7315

Within One-Mile Radius of Site

10. Midwest Industrial Chemical Company  
1509 Sublette Avenue  
St. Louis, MO 63110
11. MIRAX Chemical  
Products Corporation  
4999 Fyler  
St. Louis, MO 63139
12. Mueller Brass & Foundry Co.  
4485 Fyler  
St. Louis, MO 63139
13. Navy Brand Manufacturing Company  
5111 Southwest Avenue  
St. Louis, MO 63110
14. Schumann, Ray & Associates  
5464 Highland Park Drive  
St. Louis, MO 63110
15. Sterling Lacquer Manufacturing Co.  
3150 Brannon Avenue  
St. Louis, MO 63139
16. St. Louis Lead and Oil Company  
5548 Manchester Avenue  
St. Louis, MO 63110
17. Second District Police District  
2634 Hampton Avenue  
St. Louis, MO 63139
18. Union Electric Company  
Macklind Substation  
1633 Macklind Avenue  
St. Louis, MO 63139

**CERCLIS Site Locations (Cont.)**

**American Bank**

**Subject Property 2210-2232 Marconi**

**St. Louis, Missouri**

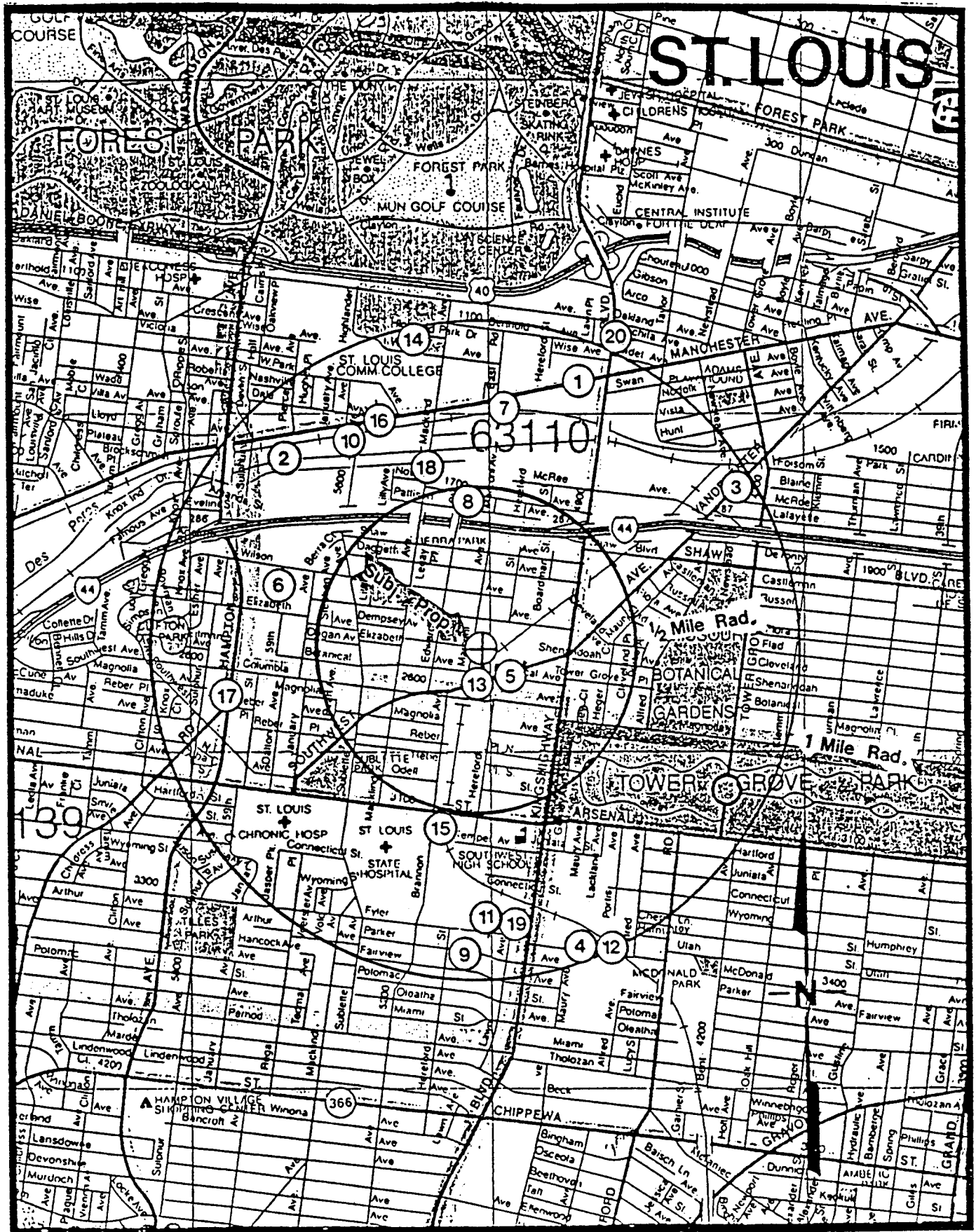
**PROJECT NO. 7315**

**Within One-Mile Radius of Site**

19. Walter Wurdack, Inc.  
4977 Fyler  
St. Louis, MO 63139

**Outside One-Mile Radius of Site**

20. Brock Company  
1367 S. Kingshighway Blvd.  
St. Louis, MO 63110



Cerclis Site Locations

APPENDIX F

*UNDERGROUND STORAGE TANK SITES*

UST Site Locations

American Bank

Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

Within One-Mile Radius of Site

1. (Name not available)  
5900 Manchester  
St. Louis, MO 63110
2. Amoco Oil  
4901 Southwest  
St. Louis, MO 63110
3. Crescent Parts  
2114 S. 59th Street  
St. Louis, MO 63110
4. Crown Foods, Inc.  
5243 Manchester  
St. Louis, MO 63110
5. Emil E. Schmidt Auto Service  
2705 Sublette  
St. Louis, MO 63139
6. Equipment Service Divisions  
1900 Hampton Avenue  
St. Louis, MO 63139
7. Fleischer-Seeger Construction Corporation  
5725 Manchester Avenue  
St. Louis, MO 63110
8. Fred Weber, Inc.  
1337 S. Kingshighway Blvd.  
St. Louis, MO 63110
9. Gary F. Vincel Pontiac  
3295 S. Kingshighway Blvd.  
St. Louis, MO 63139
10. Gateway School Serviced  
5070 Manchester Avenue  
St. Louis, MO 63110



UST Site Locations (Cont.)

American Bank

Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

Within One-Mile Radius of Site

11. Hampton Station  
2130 Hampton Avenue  
St. Louis, MO 63139
12. H.S. Trumman Center-Power Plant  
St. Louis, MO 63139
13. Japanese Auto Maintenance  
5601 Southwest Avenue  
St. Louis, MO 63139
14. John Ramming Machine Co.  
4591 McRee Avenue  
St. Louis, MO 63110
15. King Adhesives Corporation  
5231 Northrup Avenue  
St. Louis, MO 63110
16. King Dodge, Inc.  
3300 S. Kingshighway  
St. Louis, MO 63130
17. Kingshighway Center  
1641 S. Kingshighway  
St. Louis, MO 63110
- \* 18. Kop-Coat, Inc.  
5137 Southwest Avenue  
St. Louis, MO 63110
- \* 19. Koppers Co.  
5137 Southwest Avenue  
St. Louis, MO 63110
- ~~20. McQuay-Norris~~  
2320 Marconi Avenue  
St. Louis, MO 63110

## UST Site Locations (Cont.)

American Bank

Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

Within One-Mile Radius of Site

21. Mid-West Industrial Chemical Co.  
1509 Sublette Avenue  
St. Louis, MO 63110
22. Midland Color  
5215 Manchester Avenue  
St. Louis, MO 63110
23. Mobil Oil Co.  
2286 S. Kingshighway  
St. Louis, MO 63110
24. Pella Products of St. Louis  
1319 Macklind Avenue  
St. Louis, MO 63110
25. Schnucks Manchester Complex  
4900 Manchester Avenue  
St. Louis, MO 63110
26. Schnucks Markets  
4900 Manchester Avenue  
St. Louis, MO 63110
27. Second District Police Department  
2634 Hampton Avenue  
St. Louis, MO 63139
28. Southampton Hauling  
1709 Sublette Avenue  
St. Louis, MO 63110
29. St. Louis State Hospital  
5400 Arsenal  
St. Louis, MO 63139
30. St. Louis Water District  
4600 McRee Avenue  
St. Louis, MO 63110



UST Site Locations (Cont.)

American Bank

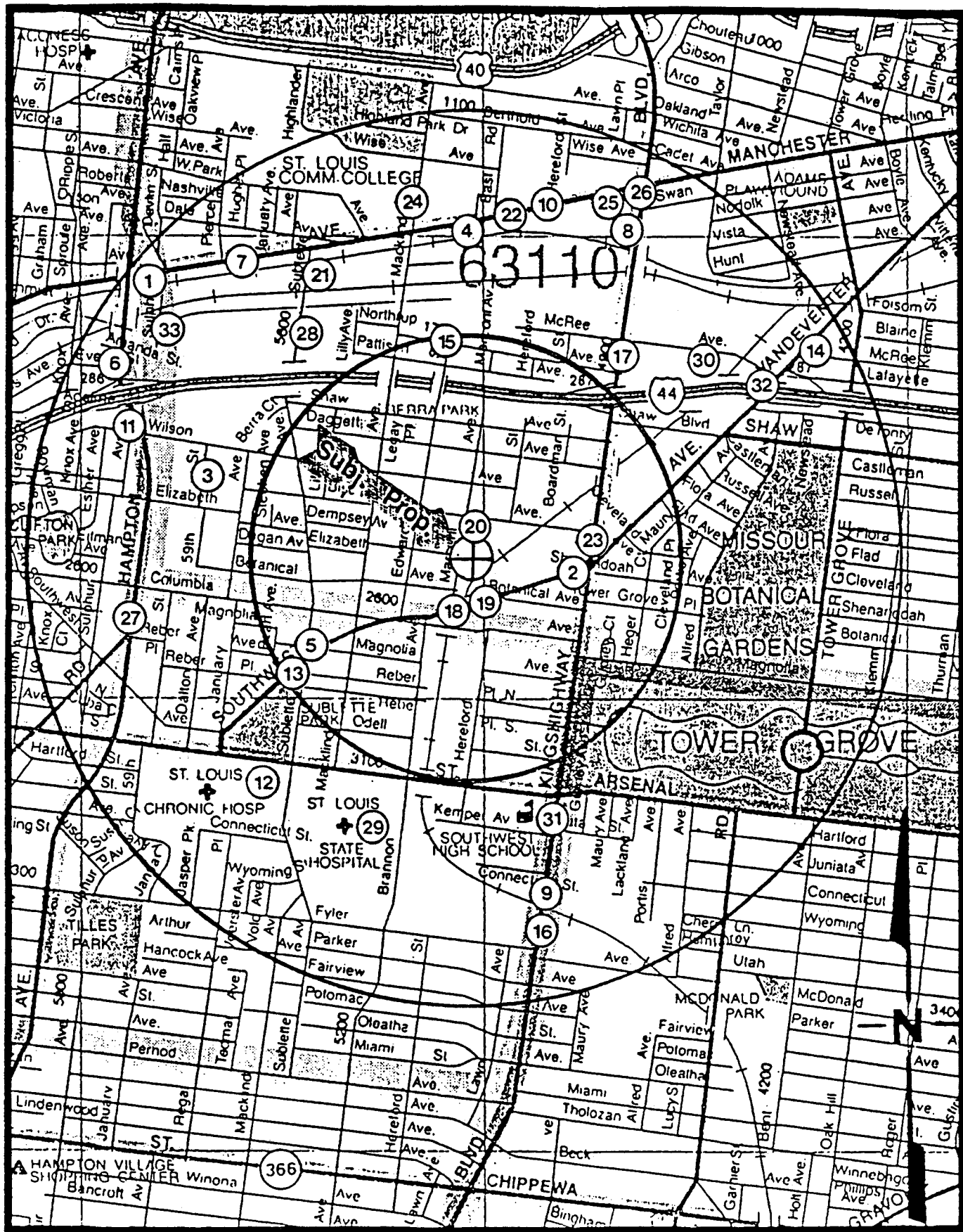
Subject Property 2210-2322 Marconi

St. Louis, Missouri

PROJECT NO. 7315

Within One-Mile Radius of Site

31. Vickers Branded Service Station  
3165 S. Kingshighway  
St. Louis, MO 63139
32. Westinghouse Electric Corporation  
1565 S. Vandeventer Avenue  
St. Louis, MO 63110
33. W.R. Grace and Company  
1705 Sulphur Avenue  
St. Louis, MO 63110



UST Site Locations



# SITEX Environmental, Inc.

September 18, 1991

11905 Borman Drive  
St. Louis, MO 63146  
(314) 569-1119

PROJECT NO. 7315

Mr. Peter Hixson  
American Bank  
1731 South Broadway  
St. Louis, Missouri 63104

RE: Testing of Electrical Equipment for PCBs - Marconi Property

Dear Pete:

SITEX Environmental, Inc. (SITE) had conducted for American Bank an environmental assessment of the property located at 2210-2322 Marconi and had noted that there were inactive electrical transformers and oil-containing switch gear remaining on the property. This equipment was left in place, but disconnected, after McQuay Norris ceased their manufacturing activities. Because of the age of this equipment and lack of any markings, there was concern that some of the equipment may contain oil contaminated with polychlorinated biphenyls (PCBs). Authorization was given by American Bank to sample the oils in these inactive pieces of equipment and determine the level of PCBs present. This information could then provide a basis for a plan of action regarding the disposal of this equipment.

The various pieces of electrical equipment of interest are located in four areas in the vicinity of Buildings 3, 4 and 25. A sampling program was developed to assure that the obtaining of oils from each piece of equipment was performed in a manner that provided assurances of safety for the sampling personnel and minimization of the potential for spillage of oil external to the equipment. The sampling crew wore appropriate protective clothing and transformer sampling was conducted by drilling a 0.5 inch hole in the top of the transformer, measuring the level of oil in the unit and collecting the oil sample by use of a glass tube inserted through the hole, thus assuring the capture of a representative sample throughout the depth of the transformer. Samples were placed in labeled glass jars for submittal to the laboratory. Prior to initiating sampling all equipment was checked by an electrician from Soper Electric Company to verify that the equipment was totally inactive.

Detailed information regarding the equipment sampled is presented in Attachment A. All 12 inactive transformers were sampled. In the electrical switching area, oil samples were collected from two switch boxes and one capacitor. A total of six capacitors and nine switch boxes are in the area. Several of the switch boxes are dry and the total volume of oil in this area is only a few gallons. Three samples were considered adequate for this area. A total of 15 samples were collected for analysis.

Mr. Peter Hixson  
September 18, 1991  
Page 2

The "Big Electric Room" (designated Sampling Area 2) is a room along the east side of Buildings 4 and 25. Four large transformers were sampled in this room (Samples 001, 005, 006 and 007). An area on the west side of Building 4 (designated Sampling Area 3) contains four transformers (Samples 008, 009, 010 and 011). An open area between Buildings 3 and 4 (designated Sampling Area 1) has four transformers (Samples 012, 013, 014 and 015). The switching area is in Building 4 where two samples were collected from switch boxes (Samples 003 and 004), and one from a capacitor (Sample 002).


In addition to the table giving information about the equipment, a photographic log of the equipment is included as Attachment B. This should provide additional reference for identification purposes. Each transformer was labeled with a reference number using spray paint.

The results of the laboratory analyses for PCBs showed that all sampled equipment are free of PCBs. The laboratory report is presented in Attachment C. This would indicate that the equipment was installed prior to the common use of PCBs in electrical cooling oils and fortunately any maintenance, repairs or retrofills performed on the equipment over the many years of service did not include the use of PCB-containing oil. As a result, the abandoned electrical equipment is not subject to the provisions of the Toxic Substances Control Act and American Bank is free to make its own decisions regarding the future of this equipment. Being PCB free, this inactive equipment can be left in place, if desired, without violating any regulations.

If there are any questions regarding this work, please contact me. SITEX is pleased to once again be of service to American Bank.

Sincerely,

SITEX ENVIRONMENTAL, INC.

  
E. Edgerley, Ph.D., P.E.  
President

EE/jk

Attachments

**ATTACHMENT A**

**SCHEDULE OF INACTIVE ELECTRICAL EQUIPMENT**



MARCONI PROPERTY - SCHEDULE OF INACTIVE ELECTRICAL EQUIPMENT

<u>ID</u> <u>No.</u>	<u>Manufacturer</u>	<u>Type</u>	<u>Transformer</u> <u>Sampling</u> <u>No.</u>	<u>Oil</u> <u>Capacity</u>	<u>Sample</u> <u>No.</u>	<u>PCB</u> <u>Concen</u> <u>tration</u>
1A	Wagner	11ROB	103181	160 gal.	012	ND*
1B	Wagner	11ROB	103180	160 gal.	013	ND
1C	Wagner	11ROB	103179	160 gal.	014	ND
1D	Wagner	HEB	286934	47 gal.	015	ND
2A	Wagner	HPL	G981039	370 gal.	001	ND
2B	Wagner	HPBL	369242	370 gal.	007	ND
2C	Wagner	HPBL	369243	370 gal.	006	ND
2D	-No Data Plate	--	369005	?	005	ND
3A	Wagner	HEBK	337389	59 gal.	011	ND
3B	Wagner	HEBK	337390	59 gal.	010	ND
3C	Wagner	HEBK	337391	59 gal.	009	ND
3D	Wagner	HEBK	298251	47 gal.	008	ND

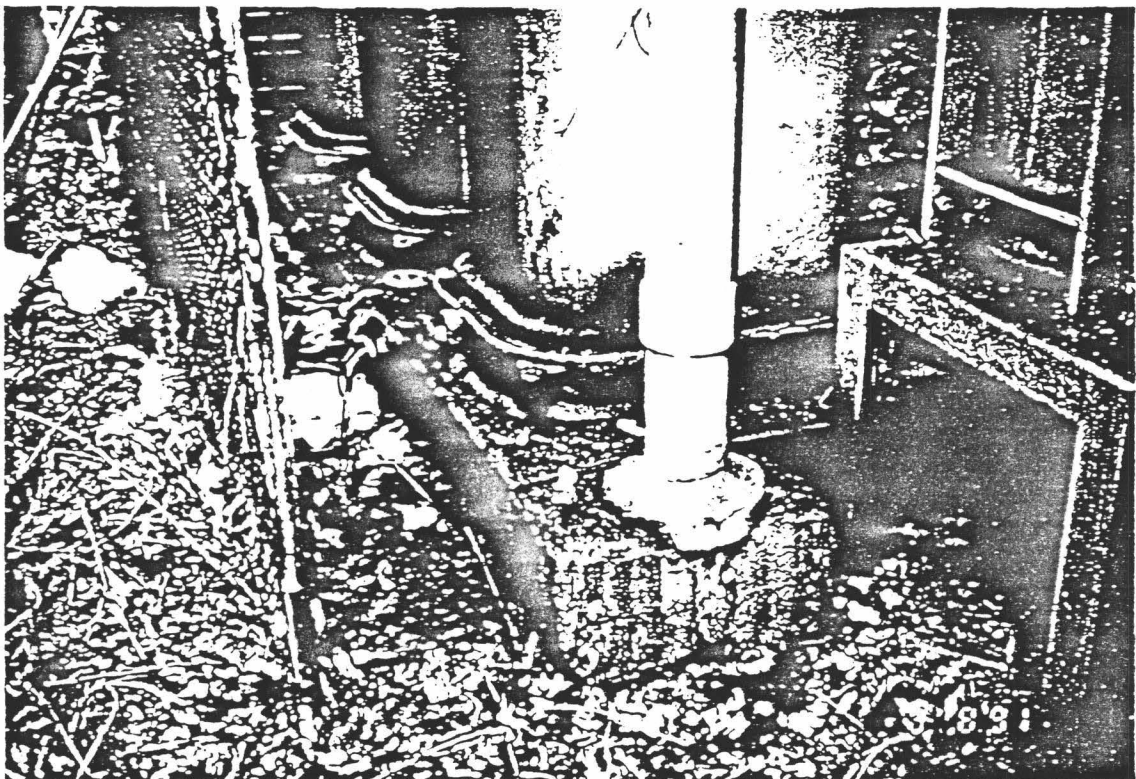
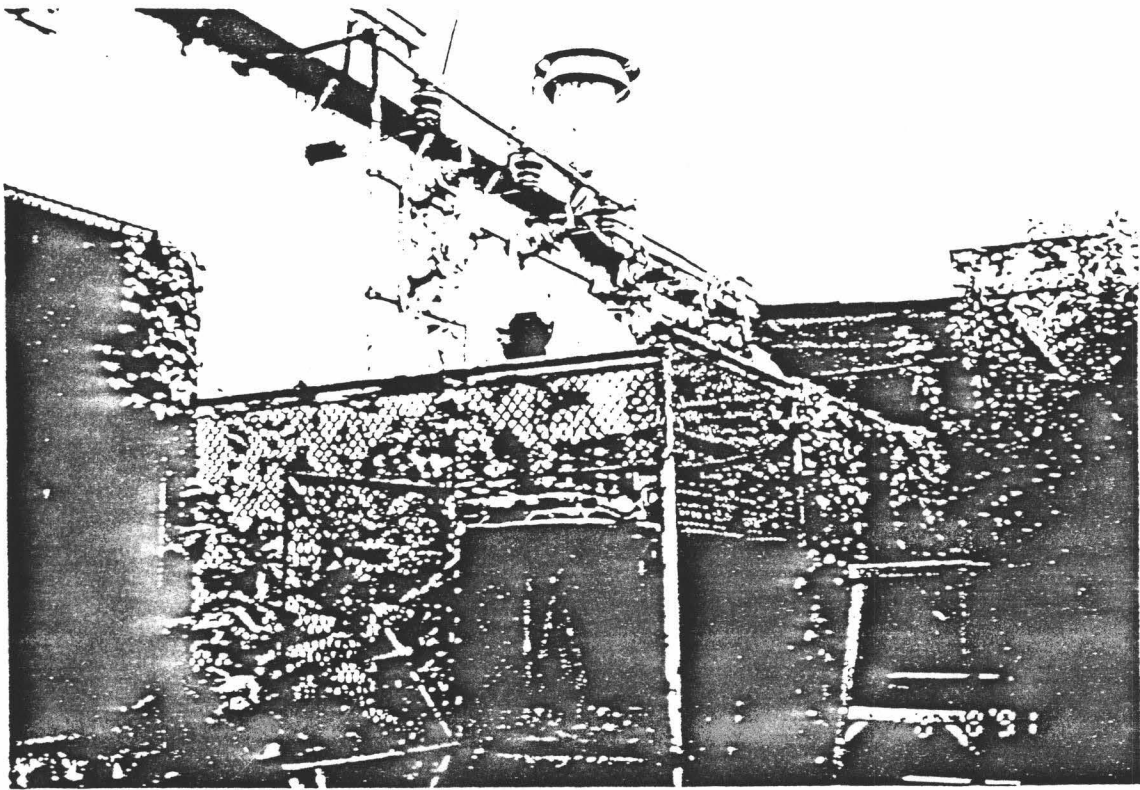
Switch Gear Equipment

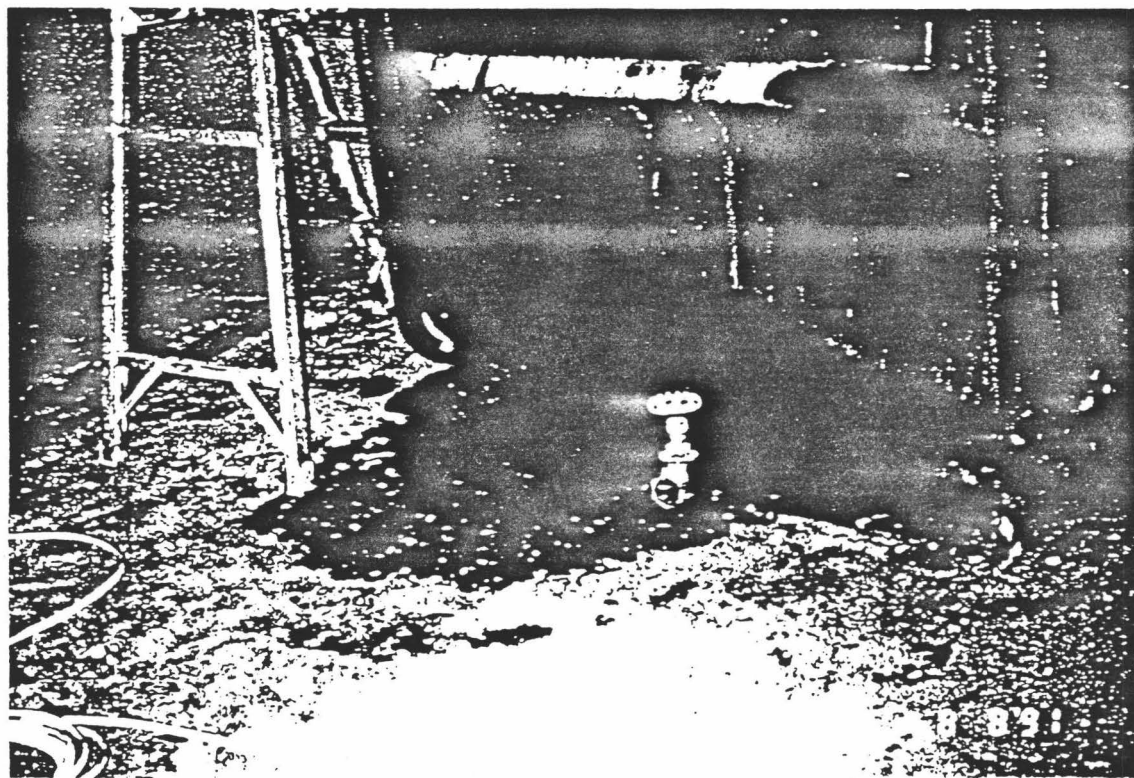
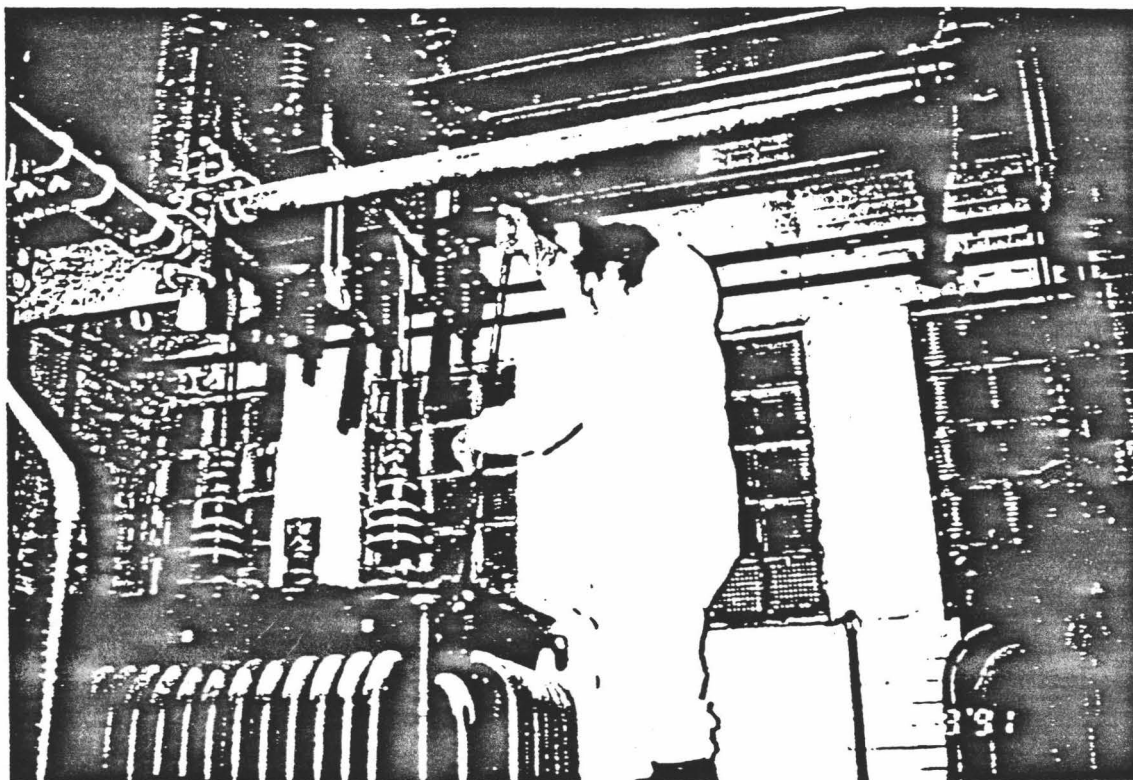
Capacitor Box (Large Style)	~2 gal.	002	ND
Capacitor Box (Small Style)	~1 gal.	003	ND
Switch Box	~1 gal.	004	ND

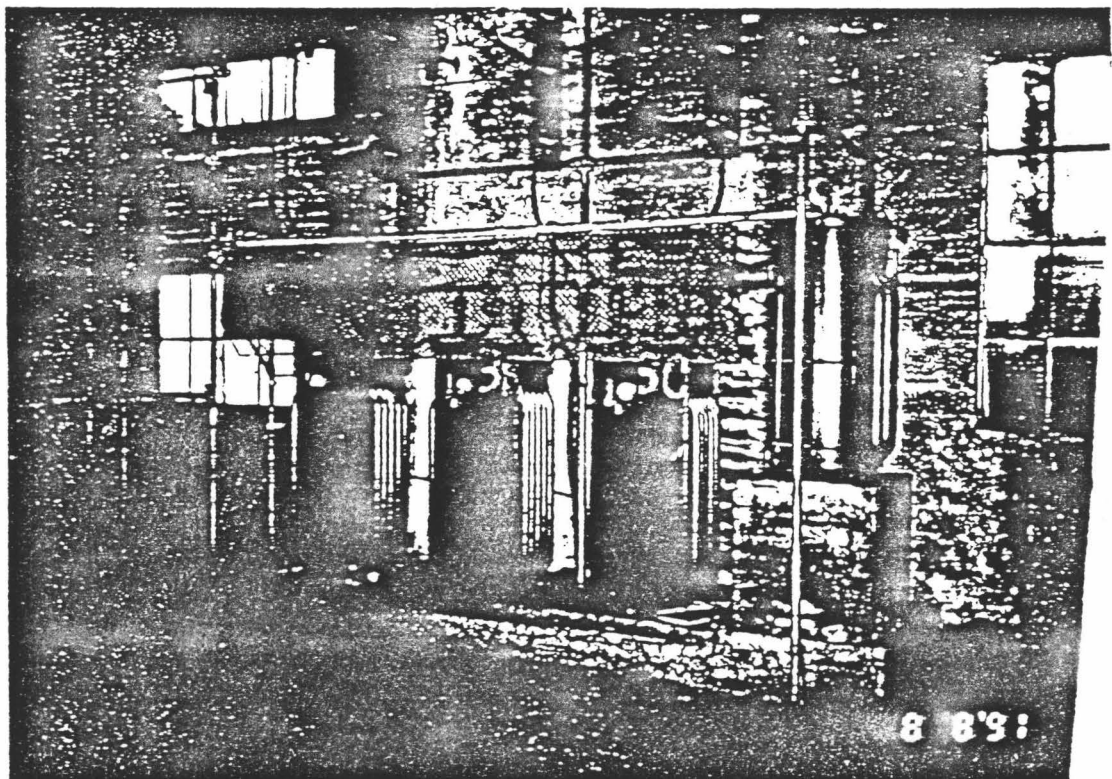
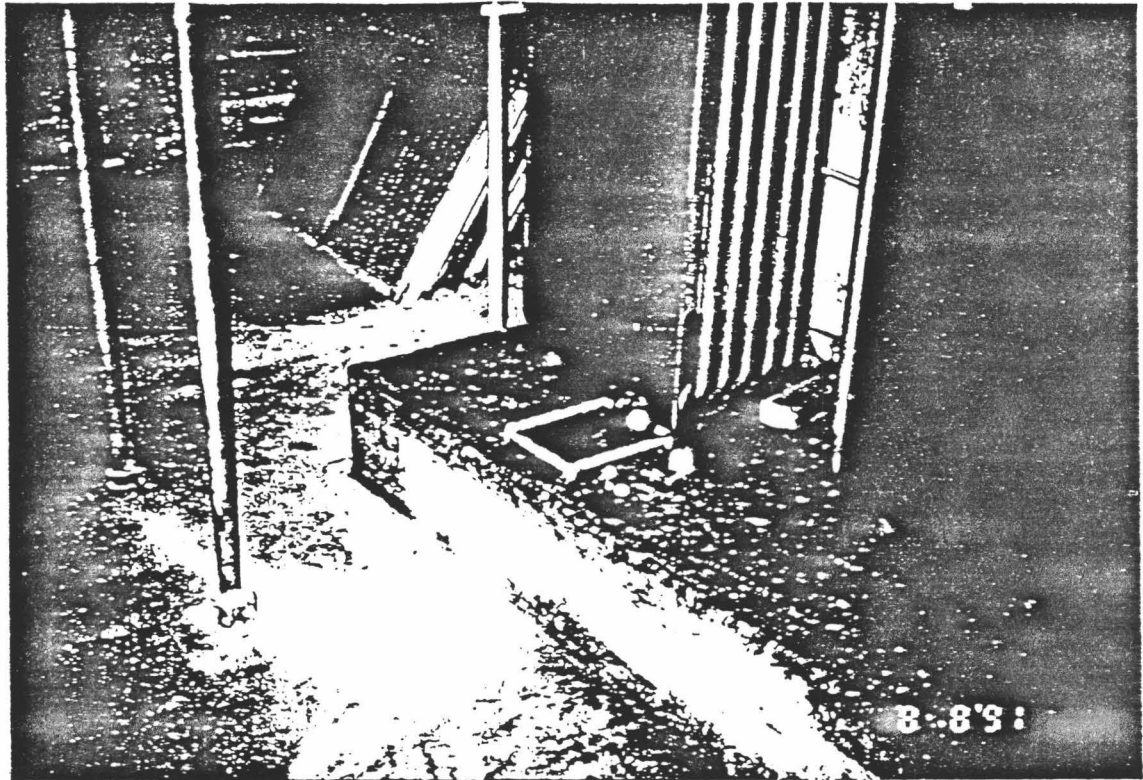
\*ND = Not Detected

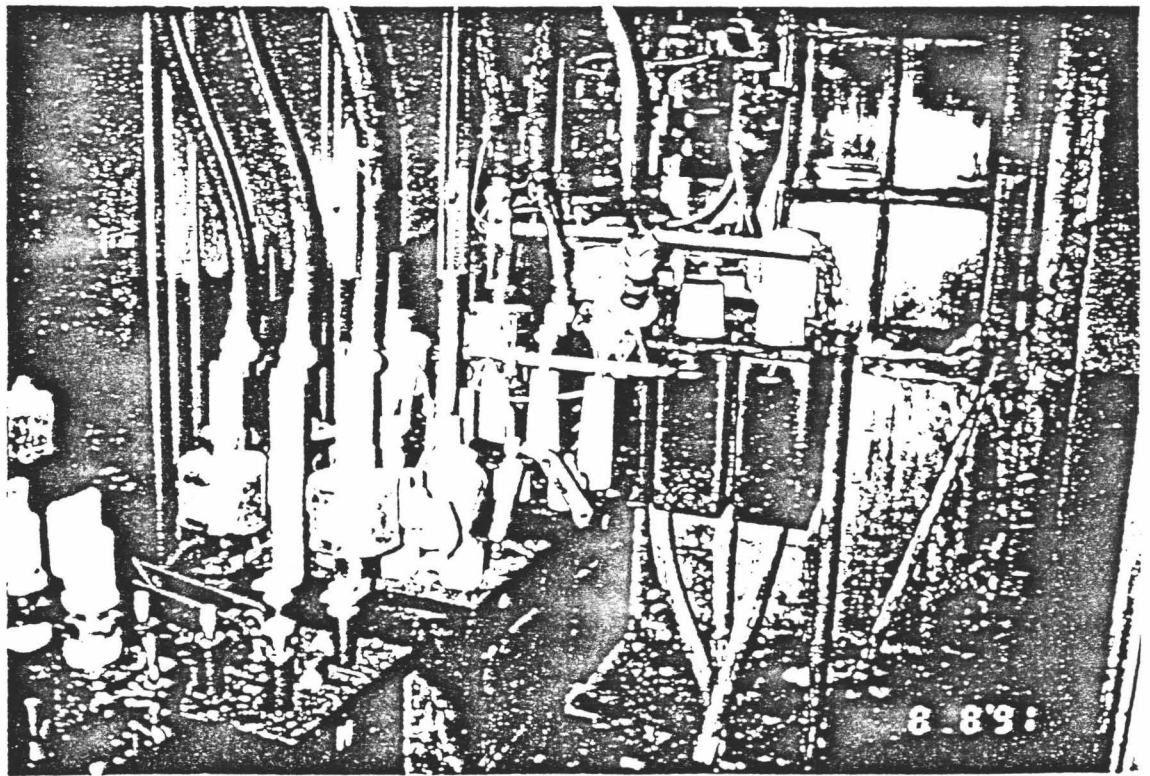
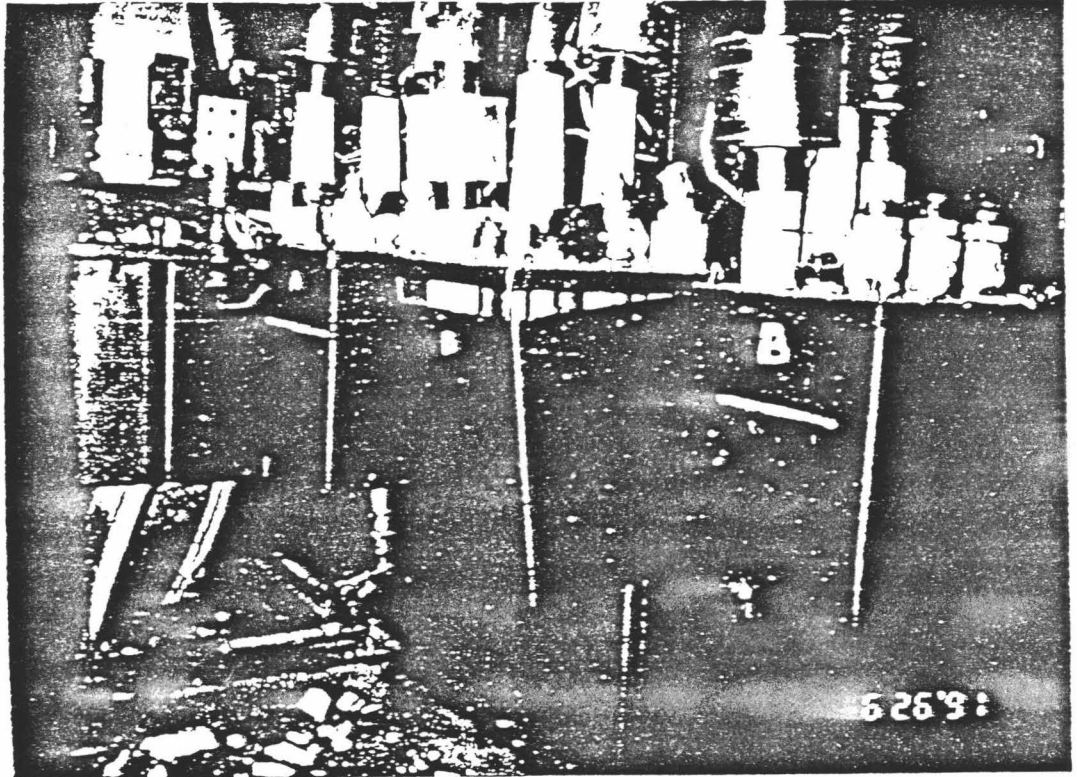
**ATTACHMENT B**

**PHOTOGRAPHIC LOG**









ATTACHMENT C

LABORATORY REPORT

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-00

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254301PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.01  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-19-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-001

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254302PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.02  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-19-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-002

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND - NOT DETECTED ABOVE QUANTITATION LIMIT

J - ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B - ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-000

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254303PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.03  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-19-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-003

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND. = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254304PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.04  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-004

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-008

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254305PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.05  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-005

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT  
J = ESTIMATED VALUE; CONCENTRATION BELOW LIMIT OF QUANTITATION  
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254308PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.08  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-008

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-00

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254307PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.07  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-007

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-008

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254306PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.06  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-006

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

314-434-4570 ATAS ANALYTICAL  
**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-00

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254309PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.09  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-009

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT  
J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION  
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

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CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254310PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.10  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-010

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

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CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254311PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.11  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-011

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND - NOT DETECTED ABOVE QUANTITATION LIMIT

J - ESTIMATED VALUE; CONCENTRATION BELOW LIMIT OF QUANTITATION

B - ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254312PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.12  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-012

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254313PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.13  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-013

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-00

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254314PC(66

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.14  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-014

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 • FAX (314) 434-0080

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: 254315PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : 2543.15  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-16-91  
DATE ANALYZED : 08-20-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : 7315-015

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

PCB'SDETECTION LIMITRESULTS

TOTAL PCB'S

10

ND

ND = NOT DETECTED ABOVE QUANTITATION LIMIT

J = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION

B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

314-434-4570 ATAS ANALYTICAL  
**ATAS**

875 Fee Fee Road • Maryland Heights, MO 63043 • (314) 434-4570 - FAX (314) 434-00

CLIENT: SITEX ENVIRONMENTAL INC.  
11905 BORMAN DRIVE  
ST. LOUIS, MO 63146  
ATTN: PAUL SPELL

REPORT: BLK823PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
ATAS # : METHOD BLANK  
DATE SUBMITTED: 08-09-91  
DATE EXTRACTED: 08-23-91  
DATE ANALYZED : 08-23-91  
METHOD REF. : SW846-8080, EPA METHODOLOGY  
PROJECT : #7315  
SAMPLE ID : METHOD BLANK

RESULTS REPORTED IN ug/g OR Parts Per Million (PPM)

<u>PCB'S</u>	<u>DETECTION LIMIT</u>	<u>RESULTS</u>
TOTAL PCB'S	10	ND

QA/QC SURROGATE RECOVERY

DIBUTYLCHLORENDATE (24-150) 77 %

ND = NOT DETECTED ABOVE QUANTITATION LIMIT  
E = ESTIMATED VALUE: CONCENTRATION BELOW LIMIT OF QUANTITATION  
B = ANALYTE DETECTED IN BLANK AS WELL AS SAMPLE

CLIENT: SITEX ENVIRONMENTAL INC.  
 11905 BORMAN DRIVE  
 ST. LOUIS, MO 63146  
 ATTN: PAUL SPELL

REPORT: SPK823PC(66)

DATE : 08-23-91

SAMPLE MATRIX : OIL  
 ATAS # : SPIKE BLANK/SPIKE BLANK DUPLICATE  
 DATE SUBMITTED: 08-09-91  
 DATE EXTRACTED: 08-23-91  
 DATE ANALYZED : 08-23-91  
 METHOD REF. : SW846-8080, EPA METHODOLOGY  
 PROJECT : #7315  
 SAMPLE ID : SPIKE BLANK/SPIKE BLANK DUPLICATE

PCB MATRIX SPIKE/MATRIX SPIKE DUPLICATE RESULTS

	SPIKE ADDED (ug/g)	AMT. FOUND SMP (ug/g)	AMT. FOUND MS (ug/g)	MS PERCENT RECOVERY
AR1260	50	0	43.5	87.0%

	AMT. FOUND MSD (ug/g)	PERCENT RECOVERY	PERCENT DIFFERENCE
AR1260	43.6	87.0%	0.0 %

Site

SITEX ENVIRONMENTAL, INC.

11905 Borman Drive  
St. Louis, MO 63146

## CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

PROJECT NUMBER: 7315DATE WORK IN: 8-8-91REPORT TO: M. KESSLER Page 101REQUESTED BY: M. KESSLERRECEIVED BY: ATTNDATE REQUIRED: ASAPSPECIAL INSTRUCTIONS: Test For PCB's in Oil.

## SAMPLE IDENTIFICATION

## ANALYSES REQUESTED

ITEM	LAB NO.	SITE CODE/ SAMPLE DESCRIPTION	DATE COLLECTED	PRESERV.	CONTAINER											COMMENT
1	7315-001	TRANSFORMER #2A	8-8-91	NOVUS	4oz-1oz/4oz	X										25
2	-002	E. BANK - CAUTION				X										
3	-003	E. BANK - SWITCH D				X										
4	-004	E. BANK - SWITCH C				X										
5	-005	TRANS #2D				X										
6	-006	TRANS #2C				X										
7	-007	TRANS #2B				X										
8	-008	TRANS #3D				X										
9	-009	TRANS #3C				X										
10	-010	TRANS #3B				X										
11	-011	TRANS #3A				X										
12	-012	TRANS #1A				X										
13	-013	TRANS #1B				X										
14	-014	TRANS #1C				X										
15	-015	TRANS #1D				X										25
16																

ITEMS TRANSFERRED	RELINQUISHED BY	Date	Time	RECEIVED BY	Date	Time	REASON for TRANSFER
15 Samples	<i>[Signature]</i>	8/9	1:23	<i>[Signature]</i>	8/9/91	1:23	ANALYSIS

772 P10 AUG 23 '91 16:04

314-434-4570 AM TECH ANALYTICAL

## SITEX ENVIRONMENTAL, INC.

11905 Borman Drive  
St. Louis, MO 63146

## CUSTODY TRANSFER RECORD/LABORATORY WORK REQUEST

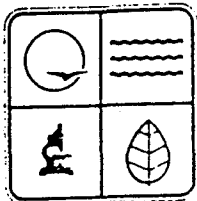
PROJECT NUMBER: 7315 DATE WORK IN: 8-8-91 REPORT TO: M. KESSLER Page 101REQUESTED BY: M. KESSLER RECEIVED BY: HT95 DATE REQUIRED: ASAPSPECIAL INSTRUCTIONS: Test For PCB's in Oil.

SAMPLE IDENTIFICATION						ANALYSES REQUESTED												COMMENT
ITEM	LAB NO.	SITE CODE/ SAMPLE DESCRIPTION	DATE COLLECTED	PRESERV.	CONTAINER													
1	7315-001	TRANSFORMER #2A	8-8-91	NOVUS	4oz tin/120	X												254
2	-002	E. BANK - C. ANCHOR	[Handwritten bracket]	[Handwritten bracket]	[Handwritten bracket]	X												
3	-003	E. BANK - SWIRCH D				X												
4	-004	E. BANK - SWIRCH C				X												
5	-005	TRANS #21				X												
6	-006	TRANS #2C				X												
7	-007	TRANS #2B				X												
8	-008	TRANS #3D				X												
9	-009	TRANS #3C				X												
10	-010	TRANS #3B				X												
11	-011	TRANS #3A				X												
12	-012	TRANS #1A				X												
13	-013	TRANS #1B				X												
14	-014	TRANS #1C				X												
15	-015	TRANS #1D				X												254
16																		

ITEMS TRANSFERRED	RELINQUISHED BY	Date	Time	RECEIVED BY	Date	Time	REASON for TRANSFER
15 Samples	[Signature]	8/9	1:23	[Signature]	8/9/91	1:23	ANALYSIS

**APPENDIX E**

**MDNR HAZARDOUS WASTE INSPECTION REPORTS**



27.085 ✓  
McQuay-Norris, Inc.  
June 10, 1982

RCRA COMPLIANCE INSPECTION REPORT

FACILITY

McQuay-Norris, Inc.  
2320 Marconi  
St. Louis, Missouri 63110  
(314) 776-4800  
EPA I.D. No. MOD990830396  
Mo. Gen I.D. No. 01115

INTRODUCTION AND FACILITY DESCRIPTION

On Tuesday, May 11, 1982 at 10:00 a.m. an initial inspection was scheduled with McQuay-Norris, Inc. to determine the compliance status of that facility with the Missouri Hazardous Waste Management Law and Rules, and the federal Resource Conservation and Recovery Act (Public Law 94-580) and the Rules and Regulations promulgated thereunder. Those present at the initial meeting were Mr. Tom Ellis, Environmental Engineer, Missouri Department of Natural Resources; Mr. Tom Moore, Director of Quality Control and Plant Engineering Manager, McQuay-Norris; and Mr. Pete Hickel, Maintenance Supervisor, McQuay-Norris. The meeting was limited to a discussion of the hazardous wastes generated at McQuay-Norris since the EPA Part A registration and the Missouri registration differed greatly. Also, it was determined that McQuay-Norris had not prepared any of the necessary documentation for requirements contained in Part 265 of the federal Hazardous Waste Management Regulations. Mr. Moore was left with copies of the generator and TSD facility checklists to use as a guide in preparing the necessary documentation for a second meeting which was scheduled to complete the inspection on May 26, 1982. However, McQuay-Norris later called requesting the meeting date be changed to Friday, June 4, 1982 at 9:30 a.m.

The second inspection was conducted on June 4, 1982 with the same persons in attendance as before. A discussion of the McQuay-Norris hazardous wastes was resumed and the checklists were completed. It was determined that McQuay-Norris had not prepared the Part 265 documentation as previously requested. Therefore, in general, all the documentation requirements of Part 265 have yet to be complied with. After informing Mr. Moore of the need to do this, the writer was led on a tour of the plant by Mr. Hickel. The inspection was completed at 1:00 p.m.

McQuay-Norris is engaged in the machining and stamping of cast iron and aluminum parts as well as plating and phosphate coating. These processes are all used in the manufacture of finished piston rings, their primary product.

The hazardous wastes generated at this facility include the following:

1. Parko waste from a plating operation - a solid phosphate coating waste containing ~1.0 ppm of cadmium. Approximately 300-400 lbs/month is generated. It is disposed of at Bob's Home Service in Warren County.

27.085  
McQuay-Norris  
June 10, 1982  
Page Two

2. Waste trichloroethylene from degreasing operations - 2 to 4 55-gallon drums/month are used resulting in approximately 2 55-gallon drums/year needing disposal. These are to the McQuay-Norris, Washington Plant for reclaiming.
3. Chrome sludge from plating operations - approximately 1 to 2 55-gallon drums/year @ 400-500 lbs/drum. No regular hauler or disposal site has been retained.
4. Sulfuric acid waste resulting from plating operations - approximately one 55-gallon drum/year. No regular hauler or disposal site has been retained.
5. Waste caustic (w/pH 12) solution containing metals (Cr - 14ppm and Pb - 14ppm) - approximately one 55-gallon drum/year. No regular hauler or disposal site has been retained.
6. Electric clean sludge and heat treating waste containing cyanide - approximately 20 gal/year. This waste has been hauled in the past by Environmental Emergency Services (St. Louis) to Nelson Industrial Service in Detroit, Michigan.
7. Waste water soluble and water insoluble oils generated from hydraulics and metal cutting lubrication. Approximately 2,600 gallons/year is generated; water insoluble waste oils are picked up by Bliss Oil Company. Water soluble waste oils are stockpiled on site at present and not disposed of.
8. A used tin-nickel plating solution is presently being stored on-site with hopes of reusing it. The quantity is unknown but is contained in several 55-gallon drums. This is not considered a waste by McQuay Norris.

#### UNSATISFACTORY FEATURES OF INSPECTION

1. None of the paperwork necessary to comply with the TSD facility requirements of 40 CFR Part 265 has been completed.
2. Surface water drainage from the hazardous waste storage area is not controlled per the requirements of 10 CSR 25-7.030 (3)(F)1.
3. Proper DOT names and numbers are not always being used on the manifests per 40 CFR 262.21(a)(5). The generator did not have all the return copies of the manifested wastes and had not reported the exceptions per 40 CFR 262.42 and 10 CSR 25-5.010 (4)(G).

#### RECOMMENDATIONS:

1. Correct all deficiencies noted in the unsatisfactory features of the inspection section. Then notify the St. Louis Regional Office to reinspect the facility.
2. A sketch of the hazardous waste storage area should be provided.

27.085  
McQuay-Norris  
June 10, 1982  
Page Two

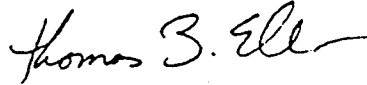
Should you have any questions concerning this report, please contact  
Tom Ellis of the St. Louis Regional Office.

APPROVED:



F. Donald Maddox, P.E.  
Regional Administrator  
St. Louis Regional Office

PREPARED BY:



Tom B. Ellis  
Environmental Engineer  
St. Louis Regional Office

FDM/TBE/bk1

Figure 10

RCRA SITE INSPECTION CHECKLIST

A. Site Name McQuay - Norris B. Street (or other identifier) 2320 Marciani

C. City St. Louis D. State Mo. E. Zip Code 63110 F. County Name

G. Site Operator Information

1. Name Tom Moore 2. Telephone Number 314-776-4600

3. Street 2320 Marciani 4. City St. Louis 5. State Mo. 6. Zip Code 63110

H. Site Description

I. Type of Ownership

☐ 1. Federal ☐ 2. State ☐ 3. County ☐ 4. Municipal ☒ 5. Private

J.

☒ 1. Generator ☐ 2. Transporter ☐ 3. Treatment ☒ 4. Storage ☐ 5. Disposal

INSPECTION INFORMATION

A. Principal Inspector Information

1. Name Tom Ellis 2. Title Env. Eng.

3. Organization Mo. DNR, SLRO 4. Telephone No. (area code & No.) 314-899-1313

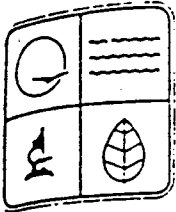
B. Inspection Participants

Tom Moore, Director of QC and Manager of Product Engineer.

Pete Hinkel, Maintenance Supervisor

Rec'd 9/12/84

Comp. 9/12/84  
B. M. C.



27.065  
McQuay-Norris/SKF

September 10, 1984

LOW #84-SL.024

Mr. Joseph Palovchik  
Environmental Coordinator  
McQuay-Norris Division  
SKF Industries  
2320 Marconi Avenue  
St. Louis, Missouri 63110

Dear Mr. Palovchik:

Enclosed please find the report of compliance based upon a recent inspection conducted by Mr. Gaurang Shah of my staff, pursuant to the federal and state hazardous waste management laws and implementing regulations.

We are requesting that you provide our office with a written response documenting steps taken to comply with the recommendations presented in the report within 30 days of receipt of this letter.

Thank you for your cooperation. Please advise should further clarification or assistance be needed.

Sincerely,

*Mike Duvall*

Mike Duvall  
Chief - Waste Management Unit  
St. Louis Regional Office

MD/bkl

CC: Central Office - Waste Management Program

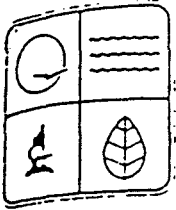
9/30  
Friday

144 to  
800

MISSOURI DEPARTMENT OF NATURAL RESOURCES  
8460 Watson Road St. Louis, Missouri 63119 (314) 849-1313

*James Bond Inc.  
Central Recd.  
9/11/84*

Christopher S. Bond Governor  
Fred A. Lafser Director



27.085 McQuay-Norris, Inc.  
September 10, 1984

RCRA/MO HWM LAW COMPLIANCE INSPECTION REPORT

FACILITY

McQuay-Norris, OEM Division  
An SKF Industries Company  
2320 Marconi Avenue  
St. Louis, Missouri 63110  
(314) 776-4800

US EPA Generator ID # MOT3 0001 0345  
MO HW Generator ID #01115  
RCRA Generator with an interim 'TSO  
(storage) facility' status.

Mr. Joseph Palovchik - Purchasing Director/Hazardous Waste Management  
Coordinator  
Mr. Bob McEwen - Manufacturing Services Manager  
Mr. Kim Learch - Manufacturing Supervisor/Engineer  
Mr. Pete Hickle - Maintenance Supervisor

INTRODUCTION

An inspection of McQuay-Norris, Inc. - OEM Division of SKF Industries Company (SKF) was initiated on July 12, 1984 to assess compliance with all applicable requirements of the Federal Resource Conservation and Recovery Act (RCRA) and the Missouri Hazardous Waste Management (MO HWM) Law. Since (i) SKF had transferred the hazardous waste management responsibilities from Mr. Thomas Moore to Mr. Joseph Palovchik (ii) Mr. Palovchik was absent on July 12, 1984 due to illness and (iii) SKF was planning a 2-week annual shutdown for general maintenance starting on July 16, 1984, Mr. McEwen requested Mr. Shah to reschedule the inspection for August 2, 1984. This compliance inspection was, therefore, reinitiated on August 2 and completed on August 3, 1984. Mr. Gaurang Shah represented the Missouri Department of Natural Resources - St. Louis Regional Office (MDNR-SLRO). Messrs. Joe Palovchik, Bob McEwen, Kim Learch and Pete Hickle represented SKF. Mr. Palovchik was the spokesman for SKF. Messrs. Palovchik and McEwen accompanied Mr. Shah on an entire plant facility inspection.

SKF OEM division is primarily engaged in fabrication and machining of cast gray iron piston rings, sealing rings and turbocharger rings which are used for automotive and small engine applications. Approximately 2% of the fabricated rings are aluminum rings. The manufacturing operation includes processes such as (i) manganese-phosphate/Parkoline coating (ii) chrome plating (iii) tin plating (iv) derusting/electrocleaning (v) machining, grinding and polishing (vi) solvent cleaning (vii) lapping (ix) laboratory analysis and quality control (x) packaging and (xi) shipping. SKF-Automotive aftermarket division, which is housed in the same building, <sup>site</sup> is involved in purchasing and stocking automotive parts for sale/distribution.

Pursuant to the previous RCRA compliance inspection conducted in June 1983 by the MDNR-SLRO, SKF registered eight hazardous waste streams with the MDNR. Since then SKF has altered some of its processes and, therefore, was advised to conduct an audit of all processes to identify, list and register with the MDNR all hazardous waste streams currently generated.

SKF currently has eight discharge points connected to the Metropolitan St. Louis District (MSD) sewer and complies with the MSD ordinance. Based on customer requirements, the rings undergo Manganese-Phosphate coating, chrome plating and/or nickel plating processes.

(A) Manganese - Phosphate/Parkoline coating:

The cast gray-iron rings are cleaned and dried prior to being submerged sequentially in tanks containing (i) parkolene solution (ii) detrex solution (iii) hot water (iv) cold spray wash (v) two-step parkolubrite solution (vi) cold water wash and (vii) parko cleaner solution. The rinse/overflow water/solution from all these tanks amounts to 1,500 gallons/month and is discharged to the MSD sewer. Parkolene and detrex solution tanks are cleaned once a week. The two-step parkolubrite tanks are cleaned once a month. Approximately 340 gallons/month of sludge is collectively generated from the parkolene, detrex and parkolubrite tank bottoms as a result of the parkolene coating process. This sludge was previously analyzed, determined to be a hazardous waste and is currently registered with the MDNR as waste stream #1. This phosphate coating sludge is disposed at the BHS, Inc. landfill at Wright City, Missouri.

SKF currently does not generate waste trichloroethylene which is still registered as waste stream #2. However, the company has two 55-gallon drums of waste trichloroethylene remaining in storage. SKF plans to contact ILWD, Inc. and/or Clayton Chemical Company for disposal of this waste.

OK  
now use trichloroethylene  
will re-register

(B) Chrome Plating Operation:

Some of the cast gray-iron rings undergo a pre-chrome plating process which consists of hot wax treatment followed by blast cabinet treatment. The blast cabinet tank containing a mixture of Trifine and Sureflow solution is cleaned out once a month. The sludge collected on the tank bottoms is scooped out and accumulated in drums. This sludge amounts to approximately 25 gallons/month. It has been neither registered with the MDNR nor sampled and analyzed pursuant to 10 CSR 25-4.010.

will register

The pre-chrome plated parts are sequentially submerged in tanks containing (i) cold water (ii) tech flake solution (iii) cold water spray wash (iv) four-step Unichrome CR 110, 130, 240, and 305 solution (v) cold water spray wash (vi) wax removal/strip arbor process and (vii) cold water wash. The rinsate/overflow amounting to approximately 2,500 gallons per month is discharged to the MSD sewer. The tanks containing tech flake solution and unichrome solution are cleaned once each year and the sludge collected on the bottom of these tanks is scooped out and accumulated in drums for disposal at ILWD, Inc. in Indiana. This chrome plating sludge is presently registered with the MDNR as waste stream #3 and amounts to approximately 360 gallons/year.

OK

The post-chrome plating operation sequentially consists of (i) ditex (ii) parkolene and (iii) gulf cut solution treatments. Three tanks containing these solutions are cleaned once a year and the sludge deposited on the bottom of these tanks is filtered/scooped out, accumulated in drums and later disposed either at Bob's Home Service landfill or at ILWD in Indiana. SKF has not registered the post-chrome plating sludge, amounting to 360 gallons/year, separately with the MDNR. This sludge has not been analyzed to determine whether or not it meets established hazardous waste criteria. SKF was advised and now intends to reregister waste #3 which will include the pre- and post-chrome plating sludge analyses and quantities along with the chrome plating sludge.

will test and re-register

To prepare rusted rings for any of the subsequent plating processes and/or fabrication, the slightly corroded rings are submerged in a sulfuric acid solution bath followed by a cold water wash tank. The sulfuric acid tank is cleaned/filtered once a year and the sludge deposited on the bottom of the tank is scooped/filtered and accumulated in drums. This acidic sludge is registered as waste stream #4 with the MDNR and amounts to approximately 120 gallons/year. SKF intends to dispose this sludge at ILWD in Indiana. The rinsate/over-flow water generated during this process is discharged to the MSD sewer. *OK*

(C) Tin Plating Operation:

The tin plating process consists of sequentially submerging parts in (i) a mixture of Endox, potash flakes and potassium stannate solution (ii) a cold water wash tank (iii) a mixture of stannous chloride, potassium hydroxide and tin solution bath (iv) hot water rinse and (v) gulf cut solution bath. The tanks containing endox solution and stannous chloride solution are cleaned once a year and the sludge deposited in these tanks is scooped/filtered and accumulated in drums for ultimate disposal at ILWD, Inc. in Indiana. This tin plating alkaline-sludge which amounts to approximately 180 gallons is registered with the MDNR as waste stream #5. The rinsate/over-flow which amounts to approximately 300 gallons/month is discharged to the MSD sewer. *will record and re-register*

The sludge deposited in the gulf cut solution tanks has been filtered/scooped out once a year. This oily sludge is considered non-hazardous. SKF originally had contracted Jerry Russell Bliss, Inc. for disposal of this sludge. The company was advised to sample and analyze this oily sludge pursuant to 10 CSR 25-4.010 and 4.020. The SKF representative stated during the inspection that the company intends to register this waste stream with the MDNR and locate an alternate means of disposal for this waste. *will test and comply with CSR 25-4.010*

The waste and/or sludge generated as a result of the rust removal process is currently registered with the MDNR as waste stream #6. SKF, since May 1984, has altered some of the steps of this process and as a result currently generates cyanide and endox-free, bio-degradable sludge only. The company, however, had 7 barrels of the previously generated cyanide and endox containing sludge on-site as noted during the inspection. *Process has been changed, elim cyanide, will test and register*

SKF has ceased operating a Tin-Nickle plating process since 1983. The company has registered the waste sludge generated during this process as waste stream #7. SKF was advised to notify the MDNR - Waste Management Program (WMP) in order to declassify/delist the discontinued stream. *will declassify and delist*

SKR currently uses 1,1,1, trichloroethane as degreasing solvent in various processes such as wax cleaning, parkolene coating and various machines such as expander press and CTB (cam-turn-bore) equipment. The company has registered waste 1,1,1 trichloroethane with the MDNR as waste stream #8. The SKF representative stated during the inspection that the company (i) does not normally generate 1,1,1 trichloroethane as spent solvent (ii) generates the sludge deposited on the bottom of tanks containing trichloroethane and (iii) generates trichloroethane contaminated with gray-iron dust during the expander press and CTB machine operation. SKF currently collects used trichloroethane from various process tanks as well as machines and stores it in a 200-300 gallon above ground, horizontal rectangular tank located in the southeast corner of the plant. The company has set up a pump and a mechanical filtering device in order to filter the waste trichloroethane solution and reuse it and. *will eliminate in house recycling*

SKF uses solvents such as kerosene, mineral spirits and acetone for various functions including general maintenance, painting, lapping, wet grinding, bulk wrapping, etc... The waste solvents are accumulated in a 200-300 gallon capacity above ground, horizontal, rectangular tank located in the southeast corner of the plant. The company filters the waste/dirty solvents and replenishes them for reuse. SKF stated that it has not generated any amount of waste solvent and/or sludge from this operation. It is possible that SKF will (i) generate waste solvent and/or waste sludge in the future, (ii) register if with the MDNR and/or (iii) consolidate it with other compatible waste for proper disposal. *will be combined in house recycling will test and use. Can be used for recycling will re register*

SKF presently uses chemicals such as nickel pentrate, hydrochloric acid, nitric acid and sulfuric acid in the steel department and the quality control laboratory. The company generates waste sludge from these operations and intends to consolidate it with the sulfuric acid sludge/waste stream #4. SKF was advised to insure the compatibility of various sludges prior to consolidating them. *will consolidate re test and confirm compatibility*

SKF presently generates waste motor oil which is not registered with the MDNR. The company was advised to manage waste oil per the requirements of 10 CSR 25-4.020. Water soluble oil used during mechanical operations is discharged to the MSD sewer once it is classified as unusable. Mineral seal oil is used in surface grinders and Molly operations. The spent/used mineral seal oil is filtered, replenished and reused. The filter cake generated as a result of this operation is accumulated and sold along with waste motor oil. *will recover and reuse control with transporter*

The industrial trade waste generated by SKF is disposed in a refuse dumpster to be transported by Environmental Industries, Inc. for ultimate disposal at either Weber landfill or West County landfill in St. Louis, Missouri. The scrap iron and the cast iron grinding waste generated by SKF is sold to Grossman Iron, Inc. of St. Louis, Missouri.

Grit blasting, which is a pre-tin plating process, generates water leached beads/grit dust in a paste form. This waste grit paste is disposed in a refuse dumpster for disposal at a sanitary landfill. The salt bath heat treat process is believed to generate reactive and toxic waste sludge. This waste sludge has not been sampled and/or analyzed pursuant to 10 CSR 25-4.010. A burr removing operation utilizes industrial glass-beeds and generates powder/ash which is believed to be silica. SKF stated that this powdered silica is normally picked-up as needed by the plant employees in order to fill excavated land patches around their residences. The company was advised to sample and/or analyze this material pursuant to 10 CSR 25-4.010 and manage/dispose if properly. If it is determined to be non-hazardous, SKF should register it as a special waste rather than allowing employees to use it as a ground filling material. *will test and evaluate and ship to authorized industrial landfill. This material has been discontinued will test and dispose to approved industrial or hazardous waste landfill*

#### UNSATISFACTORY FEATURES

- (1) SKF has not determined some of the waste streams pursuant to and per the requirements of 10 CSR 25-4.010.
- (2) Hazardous waste manifests are not properly completed and later submitted to the MDNR per the requirements of 10 CSR 25-4.010(4).

*Management control will be in effect in 4 weeks*

- (3) Hazardous waste containers are not labeled (i) 'hazardous waste' and (ii) per proper DOT requirements during storage. This is in violation of 10 CSR 25-5.010(6). *Management control will be effected in 4 weeks*
- (4) Unregistered waste is stored over 90 days and the date of accumulation is not marked on most of the hazardous waste containers in storage per the requirements of 10 CSR 25-7.050. *Management control will be effected in 4 weeks*
- (5) A waste analysis plan for all hazardous wastes does not exist per the requirements of 40 CFR 265.13. *will be completed in 6 weeks*
- (6) An emergency equipment and general inspection log and a written schedule for inspection are not provided for per the requirements of 40 CFR 265.14. *will develop log and schedule*
- (7) Implementation and up-dating of the personnel training plan is inadequate per the requirements of 40 CFR 265.16.
- (8) The preparedness procedures and prevention plan are inadequate per the requirements of 40 CFR 265 subpart C. *will prepare plan for generator only*
- (9) The contingency plan and emergency procedures are inadequate and do not meet the requirements of 40 CFR 265 subpart D. *will prepare plan for generator only*
- (10) No hazardous waste shipment annual report has ever been submitted to the US EPA Region VII per the requirements of 40 CFR 265 subpart E. *Delinquent annual reports will be supplied*
- (11) Sudden accident liability coverage insurance is not provided per the requirements of 40 CFR 265 subpart H. *SKF has sudden accident liability coverage*

#### COMMENTS

McQuay-Norris began its operation in early 1920 and currently employs approximately 200 people at this site. SKF Industries of Pennsylvania acquired it from Eaton, Inc. in 1976.

SKF has manifested hazardous waste shipments on approximately (i) 500 gallons in 1981 (ii) 2,020 gallons in 1982 (iii) 4,580 gallons in 1983 and (iv) 605 gallons so far in 1984. The company currently does not pay the hazardous waste generator fee and land disposal fee to the MDNR. SKF, however, has paid the employee head tax which is \$2.00/quarter per employee to the MDNR for 1983. *will review and update fee will be paid*

At the time of the inspection, SKF had (i) 7 barrels of parkolubrite waste flakes/sludge (ii) 2 barrels of waste trichloroethane (iii) 2-3 barrels of unregistered Kodak's waste developer and fixer (iv) 1-3 barrels of alkaline waste sludge (v) 7 barrels of cyanide laced sludge and (vi) a refuse dumpster full of (silica) powdery waste in storage.

SKF has manifested 12 shipments of hazardous waste since 1981. Some of these manifests did not indicate the US EPA generator ID number and some indicated 2 different US EPA generator ID numbers, i.e. MOT3 0001 0345 and MOD9 9083 0396. After consultation with US EPA Region VII, the company was advised to use MOT3 0001 0345 as the US EPA generator ID number. These manifests are not utilized and maintained in serially increasing shipment numbers. Some of these manifests did not indicate (i) correct Missouri waste ID number and (ii) US EPA ID numbers for hazardous waste transporters and disposal/TSD facilities. None of these manifests indicated emergency instructions and *Management Control will be implemented*

to the MDNR at least quarterly. SKF has not submitted an annual report of hazardous waste shipments off-site to the US EPA.

Some of the hazardous waste storage containers did not have proper 'hazardous waste' labels affixed. Some of these containers did not have accumulation dates marked on them. The labels on some of these containers showed 2 different US EPA ID numbers. SKF had 2 barrels of used Kodak developer and fixer in storage in order to recover silver from the waste. It has not been determined whether or not this is hazardous waste pursuant to 10 CSR 25-4.010. Mr. Hickie stated that this waste was generated by the other division of SKF and was presumably discharged to the MSD sewer until 1984. It is possible that these 2 barrels of used film developer and fixer do not meet the criteria of hazardous waste. *will be hazardous waste re silver obtained therefrom*

SKF was advised to conduct an audit of its manufacturing operations in order to identify, list, and properly manage all the hazardous waste streams. The company was advised to maintain a waste analysis plan on all varieties of hazardous waste. *will conduct*

SKF currently does not have an adequate log and written schedule for emergency equipment inspection. *will develop*

SKF does not have an adequate and up-dated personnel training plan. The company has never really implemented the personnel training plan that was devised in 1982. The company was advised to maintain documents showing a written record on the type and amount of the training provided and job title, job description and the name of the person filling each position pursuant to the requirements of 40 CFR 265.16. *will comply*

The contingency plan devised by SKF in 1982 is inadequate. It does not (i) list and describe all the emergency equipment available for use (ii) describe an evacuation plan (iii) provide a detailed description of procedures that personnel must implement in response to fires, explosions, and/or release of hazardous waste and (iv) document proof of formal arrangements with local emergency agencies. *will comply*

SKF has provided adequate closure plan and financial assurance of estimated cost for facility closure. However, the company did not furnish financial assurance for sudden accident liability coverage. *will comply*

Since this compliance inspection on August 2 and 3, 1984, SKF has sent (i) a complete log of hazardous waste shipments to the US EPA and the MDNR (ii) copies of all 12 completed manifests to the MDNR and (iii) a flow diagram of the entire manufacturing operation to the MDNR - St. Louis Regional Office.

On August 3, 1984, SKF was provided with (i) 6-8 HWG-1A part II forms (ii) form HWG-5 (iii) a copy of 10 CSR 25-4.020 and (iv) special waste approval forms.

#### RECOMMENDATIONS

- (1) Pay the hazardous waste generator fee and land disposal fee to the MDNR for 1983 and pay the employee head tax for 1984. *will submit in 3 weeks*
- (2) Identify, list, analyze and completely register all hazardous waste streams with the MDNR. *will complete in 4 weeks*

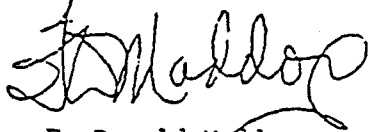
- (3) Register and properly manage waste oil, waste oil sludge and waste oil filter cakes.
- (4) Use only one US EPA generator ID number on all completed manifests.
- (5) Use and maintain completed manifests in serially increasing shipment numbers.
- (6) Use only correct Missouri waste ID numbers on completed manifests.
- (7) Indicate transporter and ultimate disposal/TSD facility US EPA ID numbers on completed manifests.
- (8) Describe emergency instructions and special handling procedures on completed manifests.
- (9) Submit completed manifests to the MDNR at least quarterly.
- (10) Affix proper labels with pertinent information i.e. correct US EPA generator ID number, date of accumulation, etc. on all hazardous waste storage containers.
- (11) Provide a waste analysis plan on all the hazardous waste streams including the used Kodak developer and fixer.
- (12) Devise an inspection log and provide a written schedule for inspections of emergency equipment.
- (13) Revise, update and implement the personnel training plan.
- (14) Maintain and furnish documentation confirming that adequate personnel training is provided to all the employees managing hazardous waste.
- (15) Provide an adequate device/alarm system in the hazardous waste operation/storage area capable of summoning emergency assistance.
- (16) Furnish and maintain adequate spill control, decontamination, and proper safety equipment.
- (17) Provide an adequate contingency plan.
- (18) Describe in detail (i) formal arrangements with local emergency agencies such as police, fire and hospital (ii) emergency equipment including its location (iii) the procedures that personnel must implement in response to emergencies and (iv) the role of emergency coordinators including their names, addresses, home and office phone numbers and authority to commit company resources to alleviate emergencies.
- (19) Provide waste analysis records for off-site hazardous waste.
- (20) Furnish financial assurance for the sudden accidents liability insurance coverage.

SKF representatives stated, during the inspection, that even though the company has generated and stored more than 1,000 kg hazardous waste for over 90 days, it plans (i) a lower generation rate and (ii) more frequent shipment of hazardous waste in the future. The company plans to request the US EPA Region VII to remove (i) its 'TSD facility' designation and (ii) if possible, the RCRA

A Missouri Hazardous Waste 'TSD facility' checklist which was completed during the inspection is attached to this report.

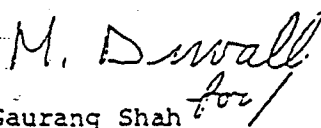
Should you have any inquiries pertaining to this report, please contact Messrs. Gaurang Shah and/or Mike Duvall of the MDNR-SLRO at (314) 849-1313/1314.

APPROVED:



F. Donald Maddox  
Regional Administrator  
St. Louis Regional Office

PREPARED BY:



Gaurang Shah *for*  
Environmental Engineer II  
St. Louis Regional Office

FDM/GS/bkl

Enclosures

JOHN ASHCROFT  
Governor

FREDERICK A. BRUNNER  
Director



Division of Energy  
Division of Environmental  
Division of Geology and  
Division of Management  
Division of Parks and  
Historic Preservation

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

St. Louis Regional Office  
8460 Watson Road, Suite 217  
St. Louis, MO 63119  
314-849-1313

September 10, 1985

Mr. James Stromske  
Environmental Specialist  
McQuay-Norris Division, SKF Industries  
2320 Marconi Avenue  
St. Louis, Missouri 63110

LOW #85-SL.037

Dear Mr. Stromske:

Enclosed please find the report of compliance based upon a recent inspection conducted by Mr. Kerwin Singleton of my staff pursuant to the federal and state hazardous waste management laws and implementing regulations.

We are requesting that you provide our office with a written response documenting steps taken to comply with the recommendations presented in the report within 30 days of receipt of this letter.

Please submit a copy of your response, along with any attachments, also to the Waste Management Program in care of Mr. Art Groner, Chief of Enforcement. The address is as follows: Missouri Department of Natural Resources, 117 East Dunklin Street, Jefferson City, Missouri 65102.

Thank you for your cooperation. Please advise should further clarification or assistance be needed.

Sincerely,

ST. LOUIS REGIONAL OFFICE

*Mike Duvall*

Mike Duvall  
Chief - Waste Management Unit

MD:mc

CC: Central Office - WMP, Enforcement/Superfund Section

27.085 St. Louis City  
McQuay-Norris



JOHN ASHCROFT  
Governor

FREDERICK A. BRUNNER  
Director

Division of Energy  
Division of Environmental Quality  
Division of Geology and Land Survey  
Division of Management Services  
Division of Parks and  
Historic Preservation

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

St. Louis Regional Office  
8460 Watson Road, Suite 217  
St. Louis, MO 63119  
314-849-1313

RCRA COMPLIANCE INSPECTION REPORT

FACILITY

McQuay-Norris, OEM Division  
SKF Industries  
2320 Marconi Avenue  
St. Louis, Missouri 63110

MO GENERATOR ID#: 01115  
EPA ID#: MOT3 0001 0345  
Generator with interim status  
(storage)

INTRODUCTION

A RCRA facility inspection of McQuay-Norris, Inc. - OEM Division of SKF Industries, St. Louis, Missouri, was conducted on August 28, 1985, to assess compliance with the applicable requirements of the Missouri Hazardous Waste Management Law. Those persons participating in the inspection were:

Mr. Kerwin C. Singleton, Environmental Engineer - Missouri Department of Natural Resources, St. Louis Regional Office

Mr. James Stromske, Environmental Specialist, and

Mr. Kim Learch, Industrial Engineer - McQuay-Norris, Inc.

SKF-OEM Division manufactures cast gray iron piston rings, sealing rings and turbocharger rings.

As recommended in the previous compliance inspection on August 2 and 3, 1984, McQuay-Norris audited its processes and updated its hazardous waste stream registration (see inspection checklist). The tin/nickel plating process which generated spent plating solution (waste #002) has been discontinued, and the generation rate of waste #008 (waste 1, 1, 1 trichloroethane) has been reduced to approximately 100 gallons per month. Waste #010 (glass beads) has been determined to be non-hazardous and should be delisted. Waste #011 is waste oil from machinery. The facility generates approximately 83 gallons of waste oil per month. Mr. Stromske stated most of this is water soluble oil which is released to a MSD sewer.

UNSATISFACTORY FEATURES

The hazardous waste labels on the drums in storage did not include the EPA ID# or the EPA waste #, a violation of 10 CSR 25-5.010(6).

COMMENTS

After making the acquaintance of Messrs. Stromske and Learch, a check of the facility's records was performed. All records were in good order.

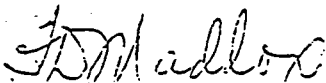
The hazardous waste storage shed contained 5 barrels of parko sludge, 1 barrel of chromic acid sludge, 1 barrel of cyanide salts and 3 barrels of waste oil. The hazardous waste labels on the chromic acid sludge and the cyanide salt barrels did not include the facility's EPA and waste ID numbers. Mr. Stromske stated that he would fill in this information. A barrel with a small amount of 1, 1, 1 trichloroethane was in the raw materials storage area. Mr. Stromske was advised to have this drum relocated to the hazardous waste storage building.

RECOMMENDATIONS

1. Ensure that hazardous waste containers are properly labelled with the required information while in storage.
2. Remove the drum of waste 1, 1, 1 trichloroethane from the materials storage area, and move it to the hazardous waste storage building.

Should you have any questions regarding this report, feel free to contact the St. Louis Regional Office.

APPROVED:



F. Donald Maddox  
Regional Administrator  
St. Louis Regional Office

September 10, 1985  
Date

PREPARED BY:



Kerwin C. Singleton  
Environmental Engineer  
St. Louis Regional Office

10 September 1985  
Date

FDM/KCS/mc

Encl.

27.085 SKF Industries  
01115



JOHN ASHCROFT

Governor

G. Tracy Mehan, III

~~Director~~

Director

Division of Energy  
Division of Environmental Quality  
Division of Geology and Land Survey  
Division of Management Services  
Division of Parks, Recreation,  
and Historic Preservation

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

St. Louis Regional Office  
8460 Watson Road, Suite 217  
St. Louis, MO 63119  
314-849-1313

March 17, 1989

Mr. C. William McGlocklin  
Corporate Environmental Manager  
SKF USA Inc.  
1100 First Ave.  
King of Prussia, PA 19406-1352

L.O.W. #89-SL.021

Dear Mr. McGlocklin:

Enclosed, please find a report of an inspection conducted by Mr. Kerwin Singleton. Please note that the section titled "UNSATISFACTORY FEATURES" list violations noted during the inspection. The "RECOMMENDATIONS" outline the steps the inspector has determined will correct those violations.

In order to document that corrective actions have been taken, you are requested to submit a written response no later than April 20, 1989. The response should describe the steps taken to correct each of the unsatisfactory features identified. Please direct the response to my attention. You should also forward a copy of your response and supporting documentation to Ms. Sandra Carroll, Chief - Hazardous Waste Enforcement, Waste Management Program, P.O. Box 176, Jefferson City, MO 65102.

It is our purpose by this letter to persuade you to take all necessary actions to comply with the Missouri Hazardous Waste Management Law. Failure to achieve timely resolution of violations may result in the referral of this case for enforcement action by the Waste Management Program.

Should you have any questions, or wish to confer in this matter, please contact me.

Sincerely,

ST. LOUIS REGIONAL OFFICE

A handwritten signature in cursive script that reads "Mike Struckhoff".

Mike Struckhoff  
Chief, Hazardous Waste Unit

MS/cj

Enclosure

cc: CO - Waste Management Program

HAZARDOUS WASTE COMPLIANCE INSPECTION REPORT

FACILITY

SKF Industries  
2320 Marconi Ave.  
St. Louis, MO 63110

MO. Gen. I.D. #: 01115  
EPA I.D. #: MOD990870396

INTRODUCTION

A visual inspection of the former SKF Industries facility (St. Louis City) was conducted on December 13, 1988. A facility representative notified the Department in August 1986 that manufacturing operations at the site had ceased on July 31, 1986.

Although the SKF Foundry in Washington, Missouri was administratively released from interim status as of February 23, 1988, sufficient documentation indicating that the St. Louis Facility never used its interim status is not on file with the Department.

The facility representative to be contacted regarding this investigation is:

Mr. C. William McGlocklin  
Corporate Environmental Manager  
SKF USA, Inc.  
1100 First Ave.  
King of Prussia, PA 19406 - 1352

UNSATISFACTORY FEATURES

1. The storage facility was not closed in accordance with 40 CFR 265 Subpart G.
2. The facility has not complied with the financial requirements of 40 CFR 265 Subpart H.

COMMENTS

The name of one of the property owners, Mr. Steve Trampe, Cordage Mill Management Co. (314/421-4730), was obtained from the real estate agent, Mr. Irv Heide, Nooney Krombach (314/863-4888). Cordage Mill Mgmt. owns 60% of the manufacturing space, and permission was given to the inspector to inspect the building.

Cordage Mill leases warehouse space to Shamrock Building Supply, owned by Mr. Tom Walsh (314/532-1589). There was no evidence of Hazardous Waste storage or spillage around the site. A copy of the environmental assessment was requested and subsequently received by the St. Louis Regional Office. A copy of the Environmental Risk Assessment prepared by Risk Science International has also been forwarded to the Waste Management Program - Enforcement Unit.

The hazardous waste storage building shown on a facility map, included in the risk assessment, is no longer in evidence. A new housing development has been constructed immediately east of the main manufacturing complex (see attached map), occupying the area where the storage building and several other plant buildings were situated.

By reviewing information included in the risk assessment and information received from Mr. McGlocklin, it is evident that the St. Louis facility has been unable to conclusively document that it has never used its interim status. The Missouri Department of Natural Resources inspection report of July 12, 1984 does state that the facility had stored an unregistered waste over 90 days. Also, a letter from Mr. Thomas Ganfield, Waste Management Program, dated November 3, 1986, advised the facility to continue to comply with the regulations until it could be verified that the facility had never used its interim status. There is no documentation on file releasing the St. Louis Facility from interim status.

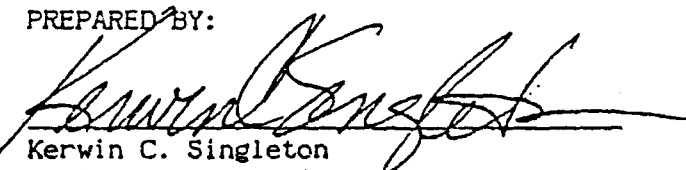
RECOMMENDATIONS

As the hazardous waste storage area was closed without approval, please submit documentation of the closure activities with the most recent copy of the closure plan for the facility. Also, submit documentation that the facility maintained the required financial assurances for closure costs and liability coverage.

Should you have any questions regarding this report, please contact Mr. Kerwin Singleton at this office, or:

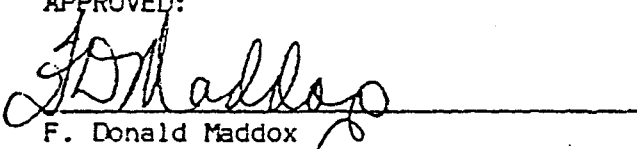
Ms. Sandra Carroll  
Chief, Hazardous Waste Enforcement Unit  
MDNR - Waste Management Program  
P.O. Box 176  
Jefferson City, MO 65102  
314/751-3176

PREPARED BY:

  
Kerwin C. Singleton  
Environmental Engineer  
Hazardous Waste Management Unit

  
Date

APPROVED:

  
F. Donald Maddox  
Regional Administrator  
St. Louis Regional Office

  
Date

FDM/KCS/cj

Enclosure

cc: CO - WMP

HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSAL FACILITY  
Interim Status Checklist

Name of Facility: SKF INDUSTRIES Date: 12/13/88

Off-Site Facility? y ~~n~~ I.S. for: STORAGE

Address: 2320 MARCONI AVE  
ST LOUIS, MO 63110

Other Inspections Done:  
RR      TRANS      LDR       
OTHER     

Phone: (215) 967-4467 MO ID# 01115 EPA ID# MOD990870396

Facility Representative: Bill McGlocklin Title: Corp. Envir. Mgr

Briefly describe manufacturing process(es). (Use continuation sheet, if needed.)

FACILITY CEASED PRODUCTION IN JULY 86

List of wastes generated. (Use continuation sheet, if needed.)

	<u>Waste</u>	<u>Amount/Month</u>	<u>Disposition</u>
1.			
2.			
3.			
4.			
5.			

- A. MANIFESTS AND RECORDKEEPING 10 CSR 25-5.262(2) AND 5.262(2)(B) AND (D)

  - Generator's MO and EPA I.D. Numbers. . . . . ( )
  - Manifest document number (MO I.D. & Shipment #). . . . . ( )
  - EPA Waste I.D. codes . . . . . ( )
  - Generator's name, address, phone # . . . . . ( )
  - All Transporters' names, phone #'s, MO and EPA I.D. #'s. . . . . ( )
  - Designated facility name, address, phone # and MO and EPA I.D. # . . . . . ( )
  - Proper DOT Shipping Name, Hazard Class and I.D. # . . . . . ( )
  - Containers, Quantity and Unit Wt/Vol being shipped properly designated. . . . . ( )
  - Proper certification including waste minimization. . . . . ( )
  - Manifest properly signed and dated . . . . . ( )
  - No more than 10 days time between generator and facility signatures. . . . . ( )
  - Manifests returned within 35 days . . . . . ( )
  - If not, exception generator report submitted within 45 days. . . . . ( )
  - Completed manifests and Summary Manifest Report and Certification. . . . . ( )
  - Spills of reportable quantities reported to DNR. . . . . ( )

B. PRETRANSPORT, CONTAINERIZATION AND LABELING 10 CSR 25-5.262(2) AND 5.262(2)(C)1

  - Waste Packaged, marked and labeled per DOT during entire on-site storage period and prior to transport. . . . . ( )
  - Placards available for use by transporters . . . . . ( )
  - Satellite accumulation requirements met (if applicable). . . . . ( )
    - a. Stored in satellite areas less than 1 year. . . . . ( )
    - b. Containers marked identifying contents and beginning date . . . . . ( )
    - c. Containers kept closed/compatible/good condition. . . . . ( )
    - d. Quantities accumulated not exceeding 55 gal. (1 qt. acutely haz. waste). . . . . ( )

C. WASTE ANALYSIS 10 CSR 25-7.265(2) AND 7.264(2)(B)

  - Waste analysis plan. . . . . ( )
  - Identify hazardous wastes handled at facility. . . . . ( )
  - Means to confirm wastes received from off-site . . . . . ( )

D. SECURITY 10 CSR 25-7.265(1) AND 7.265(2)(B)

  - 24-hour surveillance system at facility or An artificial or natural boundary/controlled access. . . . . ( )
  - Restricted access sign posted at each entrance . . . . . ( )
  - Legible from a distance of 25 feet . . . . . ( )

Briefly describe waste streams managed at each TSD process.

<u>Waste</u>	<u>Amount/month</u>	<u>Process</u>	<u>Design Capacity</u>

E. GENERAL INSPECTION 10 CSR 25-7.265(2) AND 7.265(2)(B)

Facility inspected and maintained. . . . . ( )  
Inspection log and written schedule for inspecting. . . . . ( )  
Inspect emergency equipment. . . . . ( )  
Inspect security devices. . . . . ( )  
Inspect operating and structural equipment. . . . . ( )

F. PERSONNEL TRAINING 10 CSR 25-7.265(2) AND 7.265(2)(B)

Documentation of hazardous waste director's qualifications or training. . . . . ( )  
Completed classroom or on-the-job training. . . . . ( )  
Job title, description, and name of person filling position. . . . . ( )  
Written record of the type and amount of training given. . . . . ( )  
Documentation confirming that training has been given. . . . . ( )

G. PREPAREDNESS AND PREVENTION 10 CSR 25-7.265(2) AND 7.265(2)(C)

Internal communication or alarm system. . . . . ( )  
Device in the hazardous waste operation area capable of summoning emergency assistance. . . . . ( )  
Fire control, spill control, and decontamination equipment available. . . . . ( )  
Adequate water supply for fire control equipment. . . . . ( )  
Adequate and proper safety equipment available. . . . . ( )  
Adequate aisle space. . . . . ( )  
Arrangements with local emergency agencies. . . . . ( )

H. CONTINGENCY PLAN AND EMERGENCY PROCEDURES 10 CSR 25-7.265(2) AND 7.265(2)(D)

Contingency plan. . . . . ( )  
Detailed description of procedures that personnel must implement in response to fires, explosions, or release of hazardous waste. . . . . ( )  
Describe formal arrangements with emergency agencies. . . . . ( )  
Names, addresses and phone numbers (home & office) of emergency coordinators. . . . . ( )  
Emergency equipment including its description and location. . . . . ( )  
Evacuation plan if applicable. . . . . ( )

WASTE OIL 10 CSR 25-11.010

Waste oil properly handled. . . . . ( )  
Written waste oil contract maintained. . . . . ( )

J. MANIFEST, RECORDS, REPORTING 10 CSR 25-7.265(2) AND 7.265(2)(E)  
For off-site facilities

Manifests signed and dated. . . . .  
Copy to transporter. . . . .  
Copy to generator in 30 days. . . . .  
Copy at facility for 3 years. . . . .

Operating record

Description, quantity, and TSD process for all hazardous wastes. . . . .  
Location and quantity of all hazardous waste. . . . .  
Waste analysis records from off-site sources. . . . .  
Summary and description of emergency incidents. . . . .  
Record of inspections. . . . .  
Monitoring, testing and analytical results if necessary. . . . .

Reporting

Unmanifested waste reports for off-site facilities. . . . .  
Reports for emergencies, spills, closure. . . . .

K. INTERIM STATUS CONTAINERS 10 CSR 25-7.265(2) AND 7.265(2)(I)

Containers closed and in good condition. . . . .  
Containers made of materials compatible with hazardous wastes placed in them. . . . .  
Hazardous waste containers storage area inspected once a week. . . . .  
Inspection log. . . . .  
Containers holding ignitable or reactive waste at least 50 ft. from the property line. . . . .  
Incompatible waste placed in different containers. . . . .  
Are storage containers holding hazardous waste which are incompatible with nearby materials separated by dikes, berms, walls, or other devices. . . . .  
Containers stored within a containment system (if applicable) meeting criteria of 10 CSR 25-7.265(2)(I). . . . .

L. INTERIM STATUS TANKS - 10 CSR 25-7.265(2) AND 7.265(2)(J)  
(See Tank Checklist)

M. INTERIM STATUS SURFACE IMPOUNDMENTS 10 CSR 25-7.265(2) AND 7.265(2)(K)

2 ft. of freeboard in surface impoundment. . . . .  
Earthen dikes have protective covers. . . . .  
New additions, replacements, or expansions of existing surface impoundments designated with double liner and leachate system. . . . .  
Waste analyses conducted or written documentation obtained before placing a substantially different hazardous waste into a surface impoundment used for storage or treatment. . . . .  
Freeboard level inspected each operating day. . . . .  
Dikes & vegetation inspected weekly for leaks, deterioration or failures. . . . .  
Inspections recorded in inspection logs. . . . .  
Waste treated, rendered or mixed so that mixture no longer meets the definition of ignitable or reactive. . . . .  
Incompatible wastes segregated in separate surface impoundments. . . . .

- N. GROUND-WATER MONITORING 10 CSR 25-7.265(2) AND 7.265(2)(F)  
Applicable to surface impoundments; landfills and landfills
- Groundwater monitoring wells installed . . . . . ( )
- Wells are structurally sound . . . . . ( )
- Sampling and analysis plan on-site . . . . . ( )
- Samples and groundwater levels taken . . . . . ( )
- Groundwater monitoring results kept . . . . . ( )
- O. CLOSURE AND POST-CLOSURE 10 CSR 25-7.265(2) AND 7.265(2)(G)
- Closure plan for facility . . . . .
- Description of how and when facility will be closed . . . . .
- Estimate of maximum inventory of hazardous waste . . . . .
- Steps to decontaminate equipment . . . . .
- Post-closure plan for disposal facilities only . . . . . N/A
- P. FINANCIAL REQUIREMENTS 10 CSR 25-7.265(2) AND 7.265(2)(H)
- Cost estimate for facility closure . . . . .
- Financial assurance for closure and post-closure . . . . .
- Liability for sudden accidents . . . . .
- Liability for non-sudden accidents for disposal only . . . . . N/A

COMMENTS: facility closed HW storage area  
w/o Dept Approval

Inspector Signature & Title: Kenneth English

Office: ST/OLIS

IN COMPLIANCE (✓)

IN VIOLATION OR  
ABSENT (—)

BISKOFF AVE.

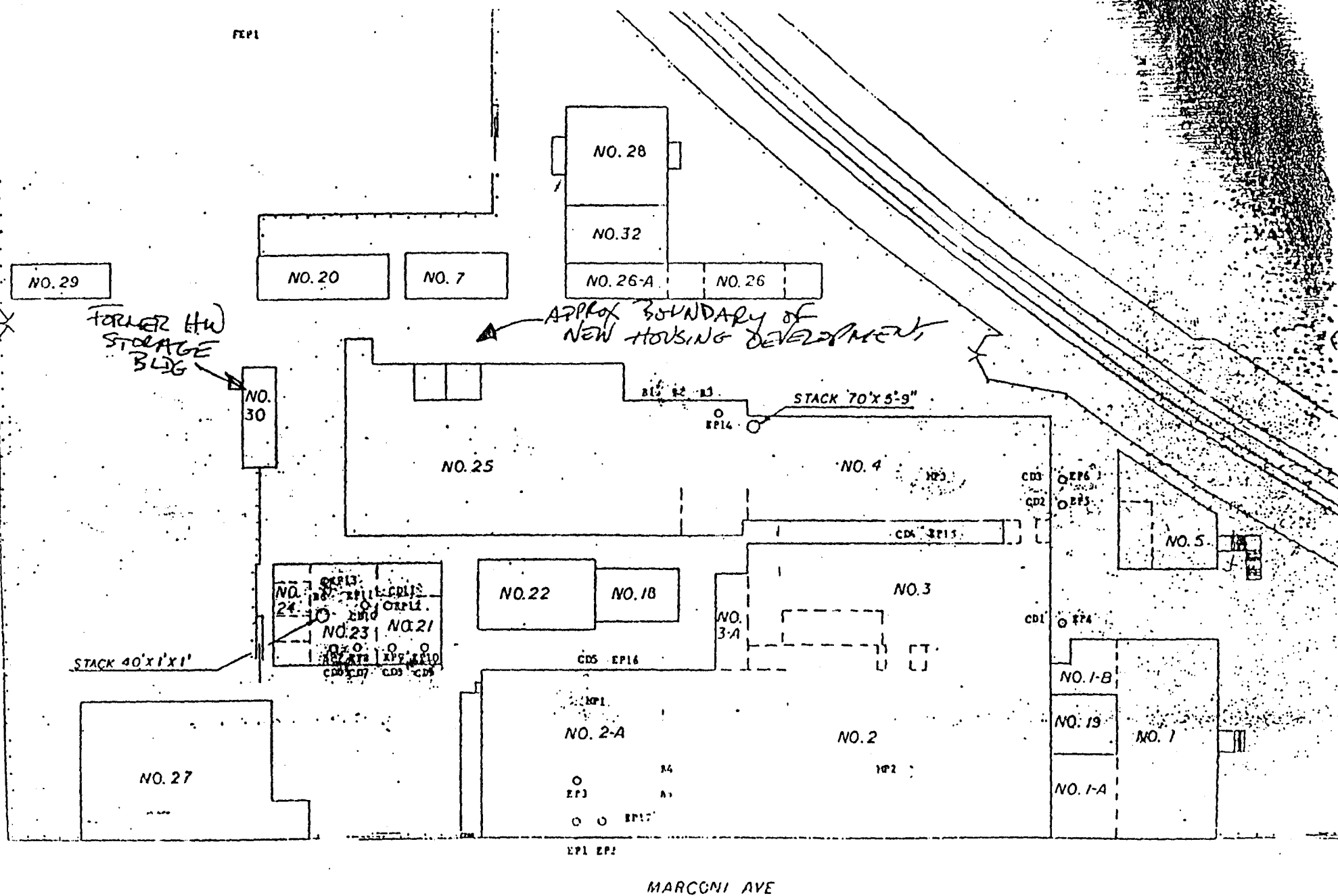


Figure 1 - Layout of the McQuay-Norris facility

✓ 27.085 SKF AUTOMOTIVE

JOHN ASHCROFT  
Governor

G. TRACY MEHAN III  
Director



Division of Energy  
Division of Environmental Quality  
Division of Geology and Land Survey  
Division of Management Services  
Division of Parks, Recreation,  
and Historic Preservation

STATE OF MISSOURI  
DEPARTMENT OF NATURAL RESOURCES

DIVISION OF ENVIRONMENTAL QUALITY

ST. LOUIS REGIONAL OFFICE

10805 Sunset Office Drive, Suite 100

St. Louis, MO 63127-1017

314-822-0101

Fax No. 314-822-0943

May 14, 1991

Mr. C. William McGlocklin  
Corporate Environmental Manager  
SKF USA, Inc.

1100 First Avenue

King of Prussia, PA 19406-1352

L.O.W. #91-SL.024

Dear Mr. McGlocklin:

Enclosed, please find a report of a hazardous waste management inspection conducted at SKF Automotive Products by Mr. Bob Carlson of my staff on April 23, 1991.

Please note that the section titled "UNSATISFACTORY FEATURES" lists violations noted during the inspection, and the "RECOMMENDATIONS" section outlines steps the inspector has determined will correct those violations.

In order to document that corrective actions have been taken, you are requested to submit a written response no later than June 21, 1991. The response should describe the steps taken to correct each of the unsatisfactory features identified. Please direct the response to Mr. Carlson. You should also forward a copy of your response and supporting documentation to Mr. Bruce Martin, Chief - Hazardous Waste Enforcement, Waste Management Program, P. O. Box 176, Jefferson City, MO 65102.

It is our purpose by this letter to persuade you to take all necessary actions to comply with the Missouri Hazardous Waste Management Law. Failure to achieve timely resolution of violations may result in the referral of this case for enforcement action by the Waste Management Program.

Should you have any questions, or wish to confer in this matter, please contact Mr. Carlson.

Sincerely,

ST. LOUIS REGIONAL OFFICE

*Robert S. P. Eck*

Robert S. P. Eck  
Regional Administrator

RSPE/BC:ps

Enclosure

cc: Waste Management Program - Enforcement  
Mr. Don Kerns, WMP - Permits



Printed on recycled paper.

RESOURCE CONSERVATION AND RECOVERY ACT  
AND  
MISSOURI HAZARDOUS WASTE MANAGEMENT LAW  
COMPLIANCE EVALUATION INSPECTION REPORT

Facility

SKF Automotive Products  
2320 Marconi Avenue  
St. Louis, MO 63110

EPA ID #: MOT300010345  
MO Generator ID: 01115

Participants

Department of Natural Resources  
(MDNR)

Mr. Bob Carlson  
Environmental Specialist  
St. Louis Regional Office

Introduction

An inspection of SKF Automotive Products, located at the above address, was conducted on April 23, 1991. The inspection was conducted under the authority of the Resource Conservation and Recovery Act (RCRA) of 1976 and Sections 260.375(9) and 260.377 of the Missouri Hazardous Waste Management Law (1977) as amended. The inspection was confined to facets of the operation relevant to hazardous waste management.

Facility Description

The Marconi Avenue SKF facility has been closed since July, 1986, and the property was sold soon afterward. The current occupants of the different buildings have not changed since Mr. Kerwin Singleton's report of March 17, 1989. Building # 1 is still vacant, and possibly Building # 3 also, as no waste materials could be viewed through the windows.

The facility repeatedly requested a reclassification from interim status to generator only, in letters sent over several years. This was achieved for the SKF Foundry in Washington, Missouri, but not for the St. Louis facility. Various company representatives certified in letters to EPA Region VII and the MDNR Waste Management Program (WMP) that the facility had not used its interim status. However, Mr. Gaurang Shah's inspection report of September 10, 1984, indicated that hazardous waste had been stored for over 90 days, which would constitute use of interim status. This information was attributed to statements made by facility representatives during the inspection.

Until a decision is made by the WMP whether or not to cancel the facility's interim status, the requirements under 40 CFR 265 as incorporated in 10 CSR 25-7.265 still apply.

Unsatisfactory Features:

1. Failure to have closure documentation certified by an independent registered professional engineer, in violation of 10 CSR 25-7.265(2)(G), incorporating by reference 40 CFR 265.115. This certification was first requested by Mr. Singleton in a letter dated December 15, 1988. An engineer involved with the Environmental Risk Assessment by Risk Science International (RSI) might be able to provide this certification.
2. Failure to document financial assurance for sudden accident liability, in violation of 10 CSR 25-7.265(2)(H), incorporating by reference 40 CFR 147(a). This was requested by Mr. Shah in the 9-10-84 report. A letter from Mr. Joseph Palovchik dated October 30, 1984, stated that this documentation would be submitted, but a copy was not found in the file at this office.

Comments


The unresolved matter of the facility's interim status has been brought to the attention of Mr. Don Kerns of the Permits Section, WMP. Should SKF wish to pursue cancellation, Mr. Shah's report of storage over 90 days must be addressed. In the meantime, and without delay, steps must be taken to address the unsatisfactory features listed above. If RSI cannot provide an engineering certification, then a current engineer's review of the closure event may be required. This certification also must address the underground storage tanks.

Recommendations

1. Contact Mr. Don Kerns at (314)751-3176. Mr. Kerns will determine what specific steps must be taken to gain compliance, and how to resolve the interim status issue.
2. Contact Risk Science International to determine if an engineer's certification of closure may be obtained.
3. Determine if liability coverage during the interim status period met the requirements.
4. Copy this office and the WMP on the above correspondence and documentation.

PREPARED BY:

ST. LOUIS REGIONAL OFFICE

  
Bob Carlson  
Environmental Specialist II

BC:ps

HAZARDOUS WASTE TREATMENT/STORAGE/DISPOSAL FACILITY  
Interim Status Checklist

Form IS-INSP  
(10-15-88)

Name of Facility: SKF Automotive Products Date: 4-23-91

Off-Site Facility? y ☒ n I.S. for: \_\_\_\_\_

Address: 2320 Marconi Avenue Other Inspections Done:  
St. Louis, MO 63110 RR \_\_\_\_\_ TRANS \_\_\_\_\_ LDR \_\_\_\_\_  
OTHER \_\_\_\_\_

Phone: (\_\_\_\_) N/A MO ID# 01115 EPA ID# MO T300010345

Facility Representative: N/A Title: N/A

Briefly describe manufacturing process(es). (Use continuation sheet, if needed.)

facility has been closed since 1986, but issues of  
proper closure + financial assurance documentation.

At issue is whether SKF ever actually made use of its  
interim status by storing hazardous waste over 90 days.

No changes since Kerwin Singleton's 12-13-88 inspection were noted.

Report dated 3-17-89

List of wastes generated. (Use continuation sheet, if needed.)

	<u>Waste</u>	<u>Amount/Month</u>	<u>Disposition</u>
1.	<u>N/A</u>		
2.			
3.			
4.			
5.			

N/A

A. MANIFESTS AND RECORDKEEPING 10 CSR 25-5.262(2) AND 5.262(2)(B) AND (D)

- Generator's MO and EPA I.D. Numbers. . . . . ( )
- Manifest document number (MO I.D. & Shipment #). . . . . ( )
- EPA Waste I.D. codes . . . . . ( )
- Generator's name, address, phone # . . . . . ( )
- All Transporters' names, phone #'s, MO and EPA I.D. #'s. . . . . ( )
- Designated facility name, address, phone # and MO and EPA I.D. # . . . . . ( )
- Proper DOT Shipping Name, Hazard Class and I.D. # . . . . . ( )
- Containers, Quantity and Unit Wt/Vol being shipped properly designated . ( )
- Proper certification including waste minimization. . . . . ( )
- Manifest properly signed and dated . . . . . ( )
- No more than 10 days time between generator and facility signatures. . . ( )
- Manifests returned within 35 days. . . . . ( )
- If not, exception generator report submitted within 45 days. . . . . ( )
- Completed manifests and Summary Manifest Report and Certification. . . ( )
- Spills of reportable quantities reported to DNR. . . . . ( )

N/A

B. PRETRANSPORT, CONTAINERIZATION AND LABELING 10 CSR 25-5.262(2) AND 5.262(2)(C)

- Waste Packaged, marked and labeled per DOT during entire on-site storage period and prior to transport. . . . . ( )
- Placards available for use by transporters . . . . . ( )
- Satellite accumulation requirements met (if applicable). . . . . ( )
  - a. Stored in satellite areas less than 1 year. . . . . ( )
  - b. Containers marked identifying contents and beginning date . . . . . ( )
  - c. Containers kept closed/compatible/good condition. . . . . ( )
  - d. Quantities accumulated not exceeding 55 gal. (1 qt. acutely hazardous waste). . . . . ( )

N/A

C. WASTE ANALYSIS 10 CSR 25-7.265(2) AND 7.264(2)(B)

- Waste analysis plan. . . . . ( )
- Identify hazardous wastes handled at facility. . . . . ( )
- Means to confirm wastes received from off-site . . . . . ( )

N/A

D. SECURITY 10 CSR 25-7.265(1) AND 7.265(2)(B)

- 24-hour surveillance system at facility or An artificial or natural boundary/controlled access. . . . . ( )
- Restricted access sign posted at each entrance . . . . . ( )
- Legible from a distance of 25 feet . . . . . ( )

Briefly describe waste streams managed at each TSD process.

<u>Waste</u>	<u>Amount/month</u>	<u>Process</u>	<u>Design Capacity</u>
<u>N/A</u>			

- N/A
- E. GENERAL INSPECTION 10 CSR 25-7.265(2) AND 7.265(2)(B)
- Facility inspected and maintained. . . . . ( )
- Inspection log and written schedule for inspecting . . . . . ( )
- Inspect emergency equipment. . . . . ( )
- Inspect security devices . . . . . ( )
- Inspect operating and structural equipment . . . . . ( )
- N/A
- F. PERSONNEL TRAINING 10 CSR 25-7.265(2) AND 7.265(2)(B)
- Documentation of hazardous waste director's qualifications or training ( )
- Completed classroom or on-the-job training . . . . . ( )
- Job title, description, and name of person filling position. . . . . ( )
- Written record of the type and amount of training given. . . . . ( )
- Documentation confirming that training has been given. . . . . ( )
- N/A
- G. PREPAREDNESS AND PREVENTION 10 CSR 25-7.265(2) AND 7.265(2)(C)
- Internal communication or alarm system . . . . . ( )
- Device in the hazardous waste operation area capable of summoning emergency assistance . . . . . ( )
- Fire control, spill control, and decontamination equipment available . . . . . ( )
- Adequate water supply for fire control equipment . . . . . ( )
- Adequate and proper safety equipment available . . . . . ( )
- Adequate aisle space . . . . . ( )
- Arrangements with local emergency agencies . . . . . ( )
- N/A
- H. CONTINGENCY PLAN AND EMERGENCY PROCEDURES 10 CSR 25-7.265(2) AND 7.265(2)(D)
- Contingency plan . . . . . ( )
- Detailed description of procedures that personnel must implement in response to fires, explosions, or release of hazardous waste . . . . . ( )
- Describe formal arrangements with emergency agencies . . . . . ( )
- Names, addresses and phone numbers (home & office) of emergency coordinators . . . . . ( )
- Emergency equipment including its description and location . . . . . ( )
- Evacuation plan if applicable. . . . . ( )
- N/A
- I. WASTE OIL 10 CSR 25-11.010
- Waste oil properly handled . . . . . ( )
- Written waste oil contract maintained. . . . . ( )
- N/A
- J. MANIFEST, RECORDS, REPORTING 10 CSR 25-7.265(2) AND 7.265(2)(E)
- For off-site facilities
- Manifests signed and dated . . . . . ( )
- Copy to transporter. . . . . ( )
- Copy to generator in 30 days . . . . . ( )
- Copy at facility for 3 years . . . . . ( )
- Operating record
- Description, quantity, and TSD process for all hazardous wastes. . . . . ( )
- Location and quantity of all hazardous waste . . . . . ( )
- Waste analysis records from off-site sources . . . . . ( )
- Summary and description of emergency incidents . . . . . ( )
- Record of inspections. . . . . ( )
- Monitoring, testing and analytical results if necessary. . . . . ( )
- Reporting
- Unmanifested waste reports for off-site facilities . . . . . ( )
- Reports for emergencies, spills, closure . . . . . ( )
- N/A
- K. INTERIM STATUS CONTAINERS 10 CSR 25-7.265(2) AND 7.265(2)(I)
- Containers closed and in good condition. . . . . ( )
- Containers made of materials compatible with hazardous wastes placed in them . . . . . ( )
- Hazardous waste containers storage area inspected once a week. . . . . ( )
- Inspection log . . . . . ( )
- Containers holding ignitable or reactive waste at least 50 ft. from the property line. . . . . ( )
- Incompatible waste placed in different containers. . . . . ( )
- Are storage containers holding hazardous waste which are incompatible with nearby materials separated by dikes, berms, walls, or other devices. . . . . ( )
- Containers stored within a containment system (if applicable) meeting criteria of 10 CSR 25-7.265(2)(I). . . . . ( )
- N/A
- L. INTERIM STATUS TANKS - 10 CSR 25-7.265(2) AND 7.265(2)(J)
- (See Tank Checklist)
- N/A
- M. INTERIM STATUS SURFACE IMPOUNDMENTS 10 CSR 25-7.265(2) AND 7.265(2)(K)
- 2 ft. of freeboard in surface impoundment. . . . . ( )
- Earthen dikes have protective covers . . . . . ( )
- New additions, replacements, or expansions of existing surface impoundments designed with double liner and leachate system . . . . . ( )
- Waste analyses conducted or written documentation obtained before placing a substantially different hazardous waste into a surface impoundment used for storage or treatment . . . . . ( )
- Freeboard level inspected each operating day . . . . . ( )
- Dikes & vegetation inspected weekly for leaks, deterioration or failures . . . . . ( )
- Inspections recorded in inspection logs. . . . . ( )
- Waste treated, rendered or mixed so that mixture no longer meets the definition of ignitable or reactive. . . . . ( )
- Incompatible wastes segregated in separate surface impoundments. . . . . ( )

N. GROUNDWATER MONITORING 10 CSR 25-7.265(2) AND 7.265(2)(F)  
Applicable to surface impoundments, landfills and landfills

N/A

- Groundwater monitoring wells installed . . . . . ( )
- Wells are structurally sound . . . . . ( )
- Sampling and analysis plan on-site . . . . . ( )
- Samples and groundwater levels taken . . . . . ( )
- Groundwater monitoring results kept. . . . . ( )

O. CLOSURE AND POST-CLOSURE 10 CSR 25-7.265(2) AND 7.265(2)(G)

- Closure plan for facility. . . . . ( )
- Description of how and when facility will be closed. . . . . ( )
- Estimate of maximum inventory of hazardous waste . . . . . ( )
- Steps to decontaminate equipment . . . . . ( )
- Post-closure plan for disposal facilities only . . . . . ( )

P. FINANCIAL REQUIREMENTS 10 CSR 25-7.265(2) AND 7.265(2)(H)

- Cost estimate for facility closure . . . . . ( )
- Financial assurance for closure and post-closure . . . . . ( )
- Liability for sudden accidents . . . . . ( )
- Liability for non-sudden accidents for disposal only . . . . . ( )

COMMENTS: referred to Don Kerns, WMP permit section,  
for review.

Inspector Signature & Title: Not L W ESTE

Office: SLRD

IN COMPLIANCE ☒ (✓)  
IN VIOLATION OR  
ABSENT ☐ (—)

## FY 1989 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG (CMEL)

STATE LOG

Today's Date: 5-6-91

(1) EPA ID: M0T300010345 Initials of Preparer: RE

(2) HANDLER NAME: SKF Automotive Products

(3) ADDRESS: [City] St. Louis [State] MO

(4) Data Entry: ☒ New ☐ Update

Facility Type: ☒ GWM ☒ GEN ☐ TSD ☐ TRANS ☐ SQG (100-1000 kg/mo)

(5) DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS LOG: 4/23/91 (5a) AGENCY RESPONSIBLE FOR S = State B = Contractor/State O = Other EVALUATION: [S] Put one code in box

(6) TYPE OF EVALUATION COVERED BY THIS REPORT: 1 = CMPL Eval. Insp. (CEI) 5 = Compl. Sched. Eval. 12 = O&M Inspection [COMPLETED]  
 Select Evaluation [1] 2 = Sampling Inspection 10 = Other inspections, including LDR 13 = CA Inspection  
 Type & insert in box: 3 = Record Review 11 = Case Development Inspection 80 = CME/O&M field work [COMPLETED] STARTED  
 4 = Compr. GWM Eval. (CME)

(7) DATE OF EVALUATION COVERED BY THIS REPORT [enter only if different from 5]: / /

(7a) Eval. Comments: Facility has been closed since 1986, but not officially as per 40CFR265.  
 (limit of 99 lines) (Assigned FY 91 inspection.)

## (8) CLASS and VIOLATIONS

## KEY

- (X) Violations [No specialty viols.]  
 (B) Both Class I Viols. & Specialty Viols.  
 (S) Same Violation/Specialty Viol.  
 (O) No Viols. or Specialty Viols. found

## SPECIALTIES VIOLATIONS

(C) Corrective Action Schedule Violation

(H) HPV

(I) No Insurance only [Class I only]

(8a) Viol. Comment: engineer's closure certification, sudden accident liability coverage  
 (80 spaces)

Class of Violation	Violations/Releases							
	GWM	C/PC	Fin. Res	Pt. B	Compl. Sch	Manifest	Land Ban	Other
I	0	0	0	0	0	0	0	0
II	0	X	X	0	X	0	0	0

## (9) ENFORCEMENT ACTIONS:

Class	Area of Viol/Rel.	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp. Ag. (use code)
				Scheduled	Actual	Assessed	Collected	
C/PC	II	03	5/14/91	6/7/91	/ /	\$	\$	
FR	II	03	5/14/91	6/7/91	/ /	\$	\$	

Codes for Resp. Ag.  
 E = EPA  
 S = State

Codes for types of enforcement actions  
 02 = 3007 Letter  
 03 = Warning Letter/NOV  
 05 = Final Admin. Order

10 = Informal  
 11 = Filed Civil Action  
 12 = Filed Criminal Action

14 = Referred to EPA  
 18 = Civil Referral to AG/DOJ  
 19 = Final Judicial Order

(10) Enforc. Comment: (80 spaces) LOW # 91-SL.024

27.085 SKF Automotive